Contents

Appendix A: Search Strategy for ML/AI-Based Diagnostic Models in Clinical Practice Guidelines

We conducted comprehensive searches in Scopus and PubMed to identify all relevant publications examining ML/AI-based diagnostic models in Clinical Practice Guidelines (CPGs). The complete search strategy, including all query terms and Boolean operators, is presented in the below table:

Citation Database	Search string	Date	Returned
Scopus	TITLE-ABS-KEY (("decision tree" OR "neural network" OR "Support vector machine" OR "Artificial intelligence" OR "Fuzzy" OR "machine learning" OR "Data mining" OR "genetic algorithm" OR metaheuristic OR "Meta heuristic" OR "meta-heuristic" OR "Cuckoo search" OR "Bees algorithm" OR "Artificial bee colony algorithm" OR "evolutionary algorithm" OR "Ant colony optimization" OR "Particle swarm optimization" OR "Firefly algorithm" OR "Memetic algorithm") AND (medical OR cancer OR diabetes OR disease) AND (diagnosis OR diagnostic OR diagnosing OR diagnosed OR diagnoses)) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English"))	Aug. 7, 2022	49533
PubMed	("decision tree"[Title/Abstract] OR "neural network"[Title/Abstract] OR "Support vector machine"[Title/Abstract] OR "Artificial intelligence"[Title/Abstract] OR "Fuzzy"[Title/Abstract] OR	Aug. 7, 2022	29181

	"machine learning"[Title/Abstract] OR "Data mining"[Title/Abstract] OR metaheuristic[Title/Abstract] OR "Meta heuristic"[Title/Abstract] OR "meta-heuristic"[Title/Abstract] OR "genetic algorithm"[Title/Abstract] OR "Cuckoo search"[Title/Abstract] OR "Bees algorithm"[Title/Abstract] OR "Artificial bee colony algorithm"[Title/Abstract] OR "evolutionary algorithm"[Title/Abstract] OR "Ant colony optimization"[Title/Abstract] OR "Particle swarm optimization"[Title/Abstract] OR "Firefly algorithm"[Title/Abstract] OR "Memetic algorithm"[Title/Abstract]) AND (diagnosis[Title/Abstract] OR diagnostic[Title/Abstract] OR diagnosing[Title/Abstract] OR diagnosed[Title/Abstract] OR diagnoses[Title/Abstract])

Appendix B: Search Methodology for Rule Extraction in Clinical Diagnosis

To systematically identify publications employing rule extraction methods for clinical diagnosis, we executed targeted searches in Scopus and PubMed using the following optimized query strategy:

Citation database	Search string	Date	Returned
Scopus	TITLE-ABS-KEY (("decision tree" OR "neural network" OR "Support vector machine" OR "Artificial intelligence" OR "Fuzzy" OR "machine learning" OR "Data mining" OR "genetic algorithm" OR metaheuristic OR "Meta heuristic" OR "meta-heuristic" OR "Cuckoo search" OR "Bees algorithm" OR "Artificial bee colony algorithm" OR "evolutionary algorithm" OR "Ant colony optimization" OR "Particle swarm optimization" OR "Firefly algorithm" OR "Memetic algorithm") AND ("linguistic rule" OR "rule extraction" OR "rule extractor") AND (medical OR cancer OR diabetes OR disease) AND (diagnosis OR diagnostic OR diagnosing OR diagnosed OR diagnoses)) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (DOCTYPE , "ar"))	Aug. 7, 2022	98
PubMed	("decision tree"[Title/Abstract] OR "neural network"[Title/Abstract] OR "Support vector machine"[Title/Abstract] OR "Artificial intelligence"[Title/Abstract] OR "Fuzzy"[Title/Abstract] OR "machine learning"[Title/Abstract] OR "Data mining"[Title/Abstract] OR metaheuristic[Title/Abstract] OR "Meta heuristic"[Title/Abstract] OR "meta-heuristic"[Title/Abstract] OR "genetic algorithm"[Title/Abstract] OR "Cuckoo search"[Title/Abstract] OR "Bees algorithm"[Title/Abstract] OR "Artificial bee colony algorithm"[Title/Abstract] OR "evolutionary algorithm"[Title/Abstract] OR "Ant colony optimization"[Title/Abstract] OR "Particle swarm optimization"[Title/Abstract] OR "Firefly algorithm"[Title/Abstract] OR "Memetic algorithm"[Title/Abstract]) AND (diagnosis[Title/Abstract] OR diagnostic[Title/Abstract] OR diagnosing[Title/Abstract] OR diagnosed[Title/Abstract] OR diagnoses[Title/Abstract]) AND ("linguistic rule" OR "rule extraction" OR "rule extractor")	Aug. 7, 2022	17

Appendix C: A Detailed Review of Articles Presenting Diagnostic Rules Derives from Interpretable ML Algorithms

The following tables provide a comprehensive breakdown of the systematic analysis conducted on the 73 qualifying articles identified through our search strategy.

Table 1. Full analysis of diagnostic rule studies using interpretable (white-box) ML algorithms.

Reference	The presence of at least one clinical expert in the research team	External Evaluating the ML-based diagnostic rules	Evaluating the cost of implementing the rules
1.	✖	✖	✖
2.	✖	✖	✖
3.	✖	✖	✖
4.	✖	✖	✖
5.	✖	✖	✖
6.	✖	✖	✖
7.	✖	✖	✖
8.	✖	✖	✖
9.	✓	✖	✖
10.	✖	✖	✖
11.	✖	✖	✖
12.	✖	✖	✖
13.	✖	✖	✖
14.	✖	✖	✖
15.	✖	✖	✖
16.	✓	✖	✖
17.	✓	✖	✖
18.	✖	✖	✖
19.	✖	✖	✖
20.	✓	✖	✖
21.	✖	✖	✖
22.	✓	✖	✖
23.	✖	✖	✖
24.	✖	✖	✖
25.	✖	✖	✖
26.	✖	✖	✖
27.	✓	✖	✖
28.	✖	✖	✖
29.	✖	✖	✖
30.	✖	✖	✖
31.	✓	✖	✖
32.	✖	✖	✖
33.	✖	✖	✖
34.	✖	✖	✖
35.	✓	✖	✖
36.	✖	✖	✖
37.	✖	✖	✖
38.	✖	✖	✖
39.	✖	✖	✖
40.	✓	✖	✖
41.	✖	✖	✖
42.	✖	✖	✖

43.	✓	×	×
44.	×	×	×
45.	×	×	×
46.	×	×	×
47.	×	×	×
48.	×	×	×
49.	×	×	×
50.	×	×	×
51.	×	×	×
52.	✓	×	×
53.	×	×	×
54.	×	×	×
55.	×	×	×
56.	×	×	×
57.	×	×	×
58.	✓	×	×
59.	×	×	×
60.	×	×	×
61.	✓	×	×
62.	×	×	×
63.	×	×	×
64.	×	×	×
65.	×	×	×
66.	×	×	×
67.	×	×	×
68.	✓	×	×
69.	×	×	×
70.	×	×	×
71.	×	×	×
72.	×	×	×
73.	✓	×	×

Table 2. Characteristics of included studies on ML-based clinical diagnostic rule extraction.

Condition	Frequency (rate (%))
The articles in which at least one clinical expert is in the research team	15 (20.55 %)
The articles included in the study evaluated the rules under real clinical situations.	0 (0.00 %)
Articles included in this study evaluated the cost of implementing the rules in real clinical settings.	0 (0.00 %)

References:

1. Alam TM, Shaukat K, Hameed IA, Khan WA, Sarwar MU, Iqbal F, et al. A novel framework for prognostic factors identification of malignant mesothelioma through association rule mining. Biomedical Signal Processing and Control. 2021;68.10.1016/j.bspc.2021.102726
2. Alam TM, Shaukat K, Khelifi A, Khan WA, Raza HME, Idrees M, et al. Disease diagnosis system using IoT empowered with fuzzy inference system. Computers, Materials and Continua. 2022;70(3):5305-19.10.32604/cmc.2022.020344

3. Alam TM, Shaukat K, Mahboob H, Sarwar MU, Iqbal F, Nasir A, et al. A Machine Learning Approach for Identification of Malignant Mesothelioma Etiological Factors in an Imbalanced Dataset. Computer Journal. 2022;65(7):1740-51.10.1093/comjnl/bxab015
4. Anand SK, Sreelalitha AV, Sushmitha BS. Designing an efficient fuzzy controller for coronary heart disease. ARPN Journal of Engineering and Applied Sciences. 2016;11(17):10319-26
5. Aslantaş G, Gürgen F, Salah AA. GA-NN approach for ECG feature selection in rule based arrhythmia classification. Neural Network World. 2014;24(3):267-83.10.14311/NNW.2014.24.016
6. Atmani B, Beldjilali B. Knowledge discovery in database: Induction graph and cellular automaton. Computing and Informatics. 2007;26(2):171-97
7. Bologna G. A model for single and multiple knowledge based networks. Artif Intell Med. 2003;28(2):141-63.10.1016/s0933-3657(03)00055-1
8. Bustillo Díaz MM, Roham M, Gabrielyan A, Melekhin VF. A technique for enamel diagnostics using results of the infrared optical non-destructive control examination. WSEAS Transactions on Systems. 2006;5(9):2218-23
9. Carpenter GA, Tan AH. Rule Extraction: From Neural Architecture to Symbolic Representation. Connection Science. 1995;7(1):3-27.10.1080/09540099508915655
10. Castro F, Nebot A, Mugica F. On the extraction of decision support rules from fuzzy predictive models. Applied Soft Computing Journal. 2011;11(4):3463-75.10.1016/j.asoc.2011.01.018
11. Chakraborty M, Biswas SK. Computer-Aided Heart Disease Diagnosis Using Recursive Rule Extraction Algorithms from Neural Networks. International Journal of Computational Intelligence and Applications. 2022.10.1142/S1469026822500110
12. Chang X, Lilly JH. Evolutionary design of a fuzzy classifier from data. IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics. 2004;34(4):1894-906.10.1109/TSMCB.2004.831160
13. Chen L, Zhou C. Research on Detection and Diagnosis Technology of Subarachnoid Hemorrhage Based on New Association Classification Algorithm. Scientific Programming. 2022;2022.10.1155/2022/9496764
14. Chen TC, Hsu TC. A GAs based approach for mining breast cancer pattern. Expert Systems with Applications. 2006;30(4):674-81.10.1016/j.eswa.2005.07.013
15. Chen Z, Li J, Wei L, Xu W, Shi Y. Multiple-kernel SVM based multiple-task oriented data mining system for gene expression data analysis. Expert Systems with Applications. 2011;38(10):12151-9.10.1016/j.eswa.2011.03.025
16. Downs J, Harrison RF, Cross SS. A decision support tool for the diagnosis of breast cancer based upon fuzzy ARTMAP. Neural Computing and Applications. 1998;7(2):147-65.10.1007/BF01414167
17. Downs J, Harrison RF, Kennedy RL, Cross SS. Application of the fuzzy ARTMAP neural network model to medical pattern classification tasks. Artif Intell Med. 1996;8(4):403-28.10.1016/0933-3657(95)00044-5
18. Du G, Jiang Z, Diao X, Yao Y. Knowledge extraction algorithm for variances handling of CP using integrated hybrid genetic double multi-group cooperative PSO and DPSO. J Med Syst. 2012;36(2):979-94.10.1007/s10916-010-9562-4
19. Duch W, Adamczak R, Grąbczewski K, Jankowski N. Neural methods of knowledge extraction. Control and Cybernetics. 2000;29(4):997-1017
20. Exarchos TP, Papaloukas C, Fotiadis DI, Michalis LK. An association rule mining-based methodology for automated detection of ischemic ECG beats. IEEE Transactions on Biomedical Engineering. 2006;53(8):1531-40.10.1109/TBME.2006.873753
21. Falco ID. Differential Evolution for automatic rule extraction from medical databases. Applied Soft Computing Journal. 2013;13(2):1265-83.10.1016/j.asoc.2012.10.022
22. Futschik ME, Reeve A, Kasabov N. Evolving connectionist systems for knowledge discovery from gene expression data of cancer tissue. Artificial Intelligence in Medicine. 2003;28(2):165-89.10.1016/S0933-3657(03)00063-0

23. Gadaras I, Mikhailov L. An interpretable fuzzy rule-based classification methodology for medical diagnosis. Artificial Intelligence in Medicine. 2009;47(1):25-41.10.1016/j.artmed.2009.05.003
24. Ganapathy S, Sethukkarasi R, Yogesh P, Vijayakumar P, Kannan A. An intelligent temporal pattern classification system using fuzzy temporal rules and particle swarm optimization. Sadhana - Academy Proceedings in Engineering Sciences. 2014;39(2):283-302.10.1007/s12046-014-0236-7
25. Han L, Luo S, Yu J, Pan L, Chen S. Rule extraction from support vector machines using ensemble learning approach: An application for diagnosis of diabetes. IEEE Journal of Biomedical and Health Informatics. 2015;19(2):728-34.10.1109/JBHI.2014.2325615
26. Hani MK, Nor SM, Hussein S, Elfadil N. Machine learning: The automation of knowledge acquisition using kohonen self-organising map neural network. Malaysian Journal of Computer Science. 2001;14(1):68-82
27. Hara A, Ichimura T, Yoshida K. Discovering multiple diagnostic rules from coronary heart disease database using automatically defined groups. Journal of Intelligent Manufacturing. 2005;16(6):645-61.10.1007/s10845-005-4368-9
28. Hayashi Y. Detection of Lower Albuminuria Levels and Early Development of Diabetic Kidney Disease Using an Artificial Intelligence-Based Rule Extraction Approach. Diagnostics (Basel, Switzerland). 2019;9(4).10.3390/diagnostics9040133
29. Hayashi Y, Nakano S. Use of a Recursive-Rule eXtraction algorithm with J48graft to achieve highly accurate and concise rule extraction from a large breast cancer dataset. Informatics in Medicine Unlocked. 2015;1:9-16.https://doi.org/10.1016/j.imu.2015.12.002
30. Hayashi Y, Nakano S, Fujisawa S. Use of the recursive-rule extraction algorithm with continuous attributes to improve diagnostic accuracy in thyroid disease. Informatics in Medicine Unlocked. 2015;1:1-8.10.1016/j.imu.2015.12.003
31. Hayashi Y, Setiono R, Yoshida K. A comparison between two neural network rule extraction techniques for the diagnosis of hepatobiliary disorders. Artif Intell Med. 2000;20(3):205-16.10.1016/s0933-3657(00)00064-6
32. Hayashi Y, Yukita S. Rule extraction using Recursive-Rule extraction algorithm with J48graft combined with sampling selection techniques for the diagnosis of type 2 diabetes mellitus in the Pima Indian dataset. Informatics in Medicine Unlocked. 2016;2:92-104.10.1016/j.imu.2016.02.001
33. Heh JS, Chen JC, Chang M. Designing a decompositional rule extraction algorithm for neural networks with bound decomposition tree. Neural Computing and Applications. 2008;17(3):297-309.10.1007/s00521-007-0115-9
34. Hou WJ, Chen HY. Rule extraction in gene-disease relationship discovery. Gene. 2013;518(1):132-8.10.1016/j.gene.2012.11.060
35. Javanmard R, JeddiSaravi K, Alinejad-Rokny H. Proposed a new method for rules extraction using artificial neural network and artificial immune system in cancer diagnosis. Journal of Bionanoscience. 2013;7(6):665-72.10.1166/jbns.2013.1160
36. Jovic A, Bogunovic N. Electrocardiogram analysis using a combination of statistical, geometric, and nonlinear heart rate variability features. Artif Intell Med. 2011;51(3):175-86.10.1016/j.artmed.2010.09.005
37. Khezri R, Hosseini R, Mazinani M. A fuzzy rule-based expert system for the prognosis of the risk of development of the breast cancer. International Journal of Engineering, Transactions A: Basics. 2014;27(10):1557-64.10.5829/idosi.ije.2014.27.10a.09
38. Koklu M, Kahramanli H, Allahverdi N. A new approach to classification rule extraction problem by the real value coding. International Journal of Innovative Computing, Information and Control. 2012;8(9):6303-15
39. Latha DS, Lakshmi PV, Fatima S. Neural network based rule extraction for analysing risk factors and stages in cervical cancer—an analytical study. SpringerBriefs in Applied Sciences and Technology2016. p. 71-9.

40. Li GZ, Yang J, Ye CZ, Geng DY. Degree prediction of malignancy in brain glioma using support vector machines. Computers in Biology and Medicine. 2006;36(3):313-25.10.1016/j.compbiomed.2004.11.003
41. Li T, Dong F, Hirota K. Fuzzy association rule mining based myocardial ischemia diagnosis on ECG signal. Journal of Advanced Computational Intelligence and Intelligent Informatics. 2015;19(2):217-24.10.20965/jaciii.2015.p0217
42. Martens D, Baesens B, Van Gestel T, Vanthienen J. Comprehensible credit scoring models using rule extraction from support vector machines. European Journal of Operational Research. 2007;183(3):1466-76.10.1016/j.ejor.2006.04.051
43. Medici V, Czlonkowska A, Litwin T, Giulivi C. Diagnosis of wilson disease and its phenotypes by using artificial intelligence. Biomolecules. 2021;11(8).10.3390/biom11081243
44. Meesad P, Yen GG. Combined numerical and linguistic knowledge representation and its application to medical diagnosis. IEEE Transactions on Systems, Man, and Cybernetics Part A:Systems and Humans. 2003;33(2):206-22.10.1109/TSMCA.2003.811290
45. Mena L, Gonzalez JA. Symbolic one-class learning from imbalanced datasets: Application in medical diagnosis. International Journal on Artificial Intelligence Tools. 2009;18(2):273-309.10.1142/S0218213009000135
46. Mitra P, Mitra S, Pal SK. Staging of cervical cancer with soft computing. IEEE Transactions on Biomedical Engineering. 2000;47(7):934-40.10.1109/10.846688
47. Mitra S, Hayashi Y. Neuro-fuzzy rule generation: survey in soft computing framework. IEEE transactions on neural networks. 2000;11(3):748-68.10.1109/72.846746
48. Ou Y, Ye S, Ding L, Zhou K, Zain AM. Hybrid Knowledge Extraction Framework Using Modified Adaptive Genetic Algorithm and BPNN. IEEE Access. 2022:1-.10.1109/ACCESS.2022.3188689
49. Pal NR, Sharma A, Sanadhya SK. Deriving meaningful rules from gene expression data for classification. Journal of Intelligent and Fuzzy Systems. 2008;19(3):171-80
50. Pechsiri C, Kawtraku A. Mining causality from texts for question answering system. IEICE Transactions on Information and Systems. 2007;E90-D(10):1523-33.10.1093/ietisy/e90-d.10.1523
51. Porebski S, Straszecka E. Extracting easily interpreted diagnostic rules. Information Sciences. 2018;426:19-37.https://doi.org/10.1016/j.ins.2017.10.034
52. Quteishat A, Lim CP, Tan KS. A modified fuzzy min-max neural network with a genetic-algorithm-based rule extractor for pattern classification. IEEE Transactions on Systems, Man, and Cybernetics Part A:Systems and Humans. 2010;40(3):641-50.10.1109/TSMCA.2010.2043948
53. Rezaei-Hachesu P, Dehghani-Soufi M, Khara R, Moftian N, Samad-Soltani T. A fuzzy mobile decision support system for diagnosing of the angiographic status of heart disease. Engineering and Applied Science Research. 2020;47(2):175-81.10.14456/easr.2020.19
54. Setiono R. Extracting rules from pruned neural networks for breast cancer diagnosis. Artificial Intelligence in Medicine. 1996;8(1):37-51.10.1016/0933-3657(95)00019-4
55. Setiono R. Generating concise and accurate classification rules for breast cancer diagnosis. Artif Intell Med. 2000;18(3):205-19.10.1016/s0933-3657(99)00041-x
56. Setiono R, Liu H. Analysis of Hidden Representations by Greedy Clustering. Connection Science. 1998;10(1):21-42.10.1080/095400998116567
57. Shahabi M, Hassanpour H, Mashayekhi H. Rule extraction for fatty liver detection using neural networks. Neural Computing and Applications. 2019;31(4):979-89.10.1007/s00521-017-3130-5
58. Singh N, Singh P, Bhagat D. A rule extraction approach from support vector machines for diagnosing hypertension among diabetics. Expert Systems with Applications. 2019;130:188-205.10.1016/j.eswa.2019.04.029
59. Sivakrithika V, Sengole Merlin S, Sugirtha K. An efficient medical image diagnosis system using soft computing techniques. Journal of Theoretical and Applied Information Technology. 2012;36(2):190-8
60. Sivanandam SN, Sumathi S, Babu S. Development of new soft computing models for data mining. Journal of the Institution of Engineers (India), Part CP: Computer Engineering Division. 2002;82(NOV.):54-71

61. Soria D, Garibaldi JM, Green AR, Powe DG, Nolan CC, Lemetre C, et al. A quantifier-based fuzzy classification system for breast cancer patients. Artificial Intelligence in Medicine. 2013;58(3):175-84.10.1016/j.artmed.2013.04.006
62. Stoean R, Stoean C. Modeling medical decision making by support vector machines, explaining by rules of evolutionary algorithms with feature selection. Expert Systems with Applications. 2013;40(7):2677-86.10.1016/j.eswa.2012.11.007
63. Su M-C. Neuro-fuzzy approach to medical diagnosis expert systems. Biomedical Engineering - Applications, Basis and Communications. 1996;8(2):138-44
64. Sumathi S, Sivanandam SN, Balachandar. Design and development of self-organised neural network schemes as a data mining tool. International Journal of Engineering Intelligent Systems for Electrical Engineering and Communications. 2001;9(2):109-25
65. Tabatabaee-Y H, Mehrnejad M, Kazem Shekofteh S. Cancer detection based on experimental sampling by genetic-fuzzy classification system. International Review on Computers and Software. 2012;7(3):1062-9
66. Tan AH, Pan H. Predictive neural networks for gene expression data analysis. Neural Networks. 2005;18(3):297-306.10.1016/j.neunet.2005.01.003
67. Turiac AS, Zdrodowska M. Data Mining Approach in Diagnosis and Treatment of Chronic Kidney Disease. Acta Mechanica et Automatica. 2022;16(3):180-8.10.2478/ama-2022-0022
68. Van Calster B, Gevaert O, Van Holsbeke C, De Moor B, Van Huffel S, Timmerman D. Clinical decision support for ovarian tumor diagnosis using Bayesian models: Results from the IOTA study. Frontiers in Artificial Intelligence and Applications2009. p. 111-28.
69. Wang S, Wang Y, Wang D, Yin Y, Wang Y, Jin Y. An improved random forest-based rule extraction method for breast cancer diagnosis. Applied Soft Computing Journal. 2020;86.10.1016/j.asoc.2019.105941
70. Wang X, Yang J, Jensen R, Liu X. Rough set feature selection and rule induction for prediction of malignancy degree in brain glioma. Computer Methods and Programs in Biomedicine. 2006;83(2):147-56.10.1016/j.cmpb.2006.06.007
71. Wang Y, Wang D, Geng N, Wang Y, Yin Y, Jin Y. Stacking-based ensemble learning of decision trees for interpretable prostate cancer detection. Applied Soft Computing Journal. 2019;77:188-204.10.1016/j.asoc.2019.01.015
72. Yap KS, Lim CP, Mohamad-Saleh J. An enhanced generalized adaptive resonance theory neural network and its application to medical pattern classification. Journal of Intelligent and Fuzzy Systems. 2010;21(1-2):65-78.10.3233/IFS-2010-0436
73. Ye CZ, Yang J, Geng DY, Zhou Y, Chen NY. Fuzzy rules to predict degree of malignancy in brain glioma. Medical & biological engineering & computing. 2002;40(2):145-52.10.1007/bf02348118

Appendix D: Identification of Domain-Specific Systematic Reviews and Meta-Analyses

Article Type	Citation database	Search string	Date	Returned
Meta-Analysis	Scopus	TITLE-ABS-KEY (("decision tree" OR "neural network" OR "Support vector machine" OR "Artificial intelligence" OR "Fuzzy" OR "machine learning" OR "Data mining" OR "genetic algorithm" OR "Cuckoo search" OR "Bees algorithm" OR "Artificial bee colony algorithm" OR "evolutionary algorithm" OR "Ant colony optimization" OR "Particle swarm optimization" OR "Firefly algorithm" OR "Memetic algorithm") AND (medical OR cancer OR diabetes OR disease) AND (diagnosis OR diagnostic OR diagnosing OR diagnosed OR diagnoses)) AND (TITLE-ABS-KEY ("meta-analysis")) AND (LIMIT-TO (LANGUAGE , "English"))	Aug. 7, 2022	762
	PubMed	(("decision tree"[Title/Abstract] OR "neural network"[Title/Abstract] OR "Support vector machine"[Title/Abstract] OR "Artificial intelligence"[Title/Abstract] OR "Fuzzy"[Title/Abstract] OR "machine learning"[Title/Abstract] OR "Data mining"[Title/Abstract] OR "genetic algorithm"[Title/Abstract] OR "Cuckoo search"[Title/Abstract] OR "Bees algorithm"[Title/Abstract] OR "Artificial bee colony algorithm"[Title/Abstract] OR "evolutionary algorithm"[Title/Abstract] OR "Ant colony optimization"[Title/Abstract] OR "Particle swarm optimization"[Title/Abstract] OR "Firefly algorithm"[Title/Abstract] OR "Memetic algorithm"[Title/Abstract] OR "Memetic algorithm" [Title/Abstract]) AND (diagnosis[Title/Abstract] OR diagnostic[Title/Abstract] OR diagnosing[Title/Abstract] OR diagnosed[Title/Abstract] OR diagnoses[Title/Abstract])) Filters applied: Meta-Analysis, English	Aug. 7, 2022	194
Systematic Review	Scopus	TITLE-ABS-KEY (("decision tree" OR "neural network" OR "Support vector machine" OR "Artificial intelligence" OR "Fuzzy" OR "machine learning" OR "Data mining" OR metaheuristic OR "Meta heuristic" OR "meta-heuristic" OR "genetic algorithm" OR "Cuckoo search" OR "Bees algorithm" OR "Artificial bee colony algorithm" OR "evolutionary algorithm" OR "Ant colony optimization" OR "Particle swarm optimization" OR "Firefly algorithm" OR "Memetic algorithm") AND (medical OR cancer OR diabetes OR disease) AND (diagnosis OR diagnostic OR diagnosing OR diagnosed OR diagnoses)) AND (LIMIT-TO (DOCTYPE , "re")) AND (LIMIT-TO (LANGUAGE , "English"))	Aug. 7, 2022	6574

	PubMed	("decision tree"[Title/Abstract] OR "neural network"[Title/Abstract] OR "Support vector machine"[Title/Abstract] OR "Artificial intelligence"[Title/Abstract] OR "Fuzzy"[Title/Abstract] OR "machine learning"[Title/Abstract] OR "Data mining"[Title/Abstract] OR metaheuristic[Title/Abstract] OR "Meta heuristic"[Title/Abstract] OR "meta-heuristic"[Title/Abstract] OR "genetic algorithm"[Title/Abstract] OR "Cuckoo search"[Title/Abstract] OR "Bees algorithm"[Title/Abstract] OR "Artificial bee colony algorithm"[Title/Abstract] OR "evolutionary algorithm"[Title/Abstract] OR "Ant colony optimization"[Title/Abstract] OR "Particle swarm optimization"[Title/Abstract] OR "Firefly algorithm"[Title/Abstract] OR "Memetic algorithm"[Title/Abstract] OR "Memetic algorithm" [Title/Abstract]) AND (diagnosis[Title/Abstract] OR diagnostic[Title/Abstract] OR diagnosing[Title/Abstract] OR diagnosed[Title/Abstract] /OR diagnoses[Title/Abstract]) AND applied: Review, Systematic Review, English	Aug. 7, 2022	4278

Appendix E: Systematic reviews

The inclusion criteria:

1) The article should be a journal article and not a conference presentation or other types,
2) The article must be a systematic review and not a meta-analysis or other types,
3) The article must review the classification algorithms used to diagnose a disease.

Row	Reference	Inclusion criteria	Investigated criteria
(1)	Machine Learning Methods for Diagnosis of Eye-Related Diseases: A Systematic Review Study Based on Ophthalmic Imaging Modalities	✓	Comparison of different imaging methods to verify deep/machine learning
(2)	A systematic review on the role of artificial intelligence in sonographic diagnosis of thyroid cancer: Past, present and future	✓	Comparison of different imaging methods to verify deep/machine learning
(3)	Machine learning and the cancer-diagnosis problem — No gold standard	×(3)	
(4)	Artificial Intelligence in Nonalcoholic Fatty Liver Disease: A New Frontier in Diagnosis and Treatment	✓	Comparison of sensitivity and specificity of different methods
(5)	Disease's diagnosis using fuzzy logic methods: A systematic and meta-analysis review	×(2)	
(6)	Artificial neural networks for diagnosis and survival prediction in colon cancer	✓	Comparison of sensitivity and specificity of different methods
(7)	Application of Artificial Intelligence for the Diagnosis and Treatment of Liver Diseases	✓	Comparison of sensitivity and specificity of different methods
(8)	Machine-Learning-Based Disease Diagnosis: A Comprehensive Review	✓	Comparison of different evaluation criteria of different methods
(9)	Machine learning-based heart disease diagnosis: A systematic literature review	✓	Comparison of different evaluation criteria of different methods
(10)	Machine learning-based coronary artery disease diagnosis: A comprehensive review	✓	Comparison of different evaluation criteria of different methods
(11)	Coronary artery disease detection using artificial intelligence techniques: A survey of trends, geographical differences and diagnostic features 1991–2020	✓	Comparison of different imaging methods to verify deep learning

(12)	The Effectiveness of Artificial Intelligence in Detection of Oral Cancer: AI AND ORAL CANCER DIAGNOSIS	✓	Comparison of different evaluation criteria of different methods
(13)	Artificial intelligence in medical diagnosis: the INTERNIST/CADUCEUS approach	✓	Comparison of different imaging methods to verify deep learning
(14)	Applications of machine learning predictive models in the chronic disease diagnosis	✓	Comparison of different evaluation criteria of different methods
(15)	Artificial intelligence for assisting diagnostics and assessment of Parkinson's disease—A review	✓	Comparison of different evaluation criteria of different methods
(16)	SARS-CoV-2 diagnosis using medical imaging techniques and artificial intelligence: A review	✓	Comparison of different evaluation criteria of different methods
(17)	Role of artificial intelligence in multidisciplinary imaging diagnosis of gastrointestinal diseases	✓	Comparison of different evaluation criteria of different methods
(18)	Medical diagnosis using machine learning: a statistical review	✓	Comparison of the number of used algorithms
(19)	Artificial intelligence: A promising frontier in bladder cancer diagnosis and outcome prediction	✓	Comparison of different evaluation criteria of different methods
(20)	Machine learning applied to diagnosis of human diseases: A systematic review	✓	Comparison of the number of used algorithms
(21)	Radiomic and genomic machine learning method performance for prostate cancer diagnosis: Systematic literature review	✓	Comparison of different evaluation criteria of different methods
(22)	The use of artificial intelligence for the diagnosis of bladder cancer: a review and perspectives	✓	Comparison of different evaluation criteria of different methods
(23)	Machine learning and novel biomarkers for the diagnosis of alzheimer’s disease	✓	Comparison of different evaluation criteria of different methods
(24)	A meta-analysis of the diagnostic performance of machine learning-based MRI in the prediction of axillary lymph node metastasis in breast cancer patients	×(2)	
(25)	Artificial intelligence: Emerging player in the diagnosis and treatment of digestive disease	✓	Comparison of different evaluation criteria of different methods
(26)	Cancer diagnosis and disease gene identification via statistical machine learning	×(3)	

(27)	Artificial intelligence for assisting cancer diagnosis and treatment in the era of precision medicine	✓	Comparison of different evaluation criteria of different methods
(28)	Digital diagnostics and artificial intelligence in prostate cancer treatment in 5 years from now	✓	Report of data mining essential process steps in prediction
(29)	Artificial intelligence in diagnosis of obstructive lung disease: Current status and future potential	✓	Report of different algorithms used in the field of prediction
(30)	A Review of Artificial Intelligence's Neural Networks (Deep Learning) Applications in Medical Diagnosis and Prediction	✓	Report of different algorithms used in the field of prediction
(31)	Diagnostic Value of Artificial Intelligence-Assisted Endoscopic Ultrasound for Pancreatic Cancer: A Systematic Review and Meta-Analysis	×(2)	
(32)	The Importance of Incorporating Human Factors in the Design and Implementation of Artificial Intelligence for Skin Cancer Diagnosis in the Real World	×(3)	
(33)	Artificial intelligence in the diagnosis of pediatric allergic diseases	✓	Report of different algorithms used in the field of prediction
(34)	Machine learning, medical diagnosis, and biomedical engineering research - commentary	✓	Comparison of different evaluation criteria of different methods
(35)	Convolutional neural networks for computer-aided detection or diagnosis in medical image analysis: An overview	✓	Comparison of different evaluation criteria of different methods
(36)	Application of artificial intelligence in diagnosis of osteoporosis using medical images: a systematic review and meta-analysis	×(2)	
(37)	Role of artificial intelligence in the early diagnosis of oral cancer. A scoping review	✓	Comparison of different evaluation criteria of different methods
(38)	Predictive data mining approaches in medical diagnosis: A review of some diseases prediction	✓	Comparison of the number of used algorithms
(39)	Internet of Things Technologies and Machine Learning Methods for Parkinson’s Disease Diagnosis, Monitoring and Management: A Systematic Review	✓	Comparison of different evaluation criteria of different methods
(40)	Scope of artificial intelligence in screening and diagnosis of colorectal cancer	✓	Comparison of different evaluation criteria of different methods
(41)	Artificial intelligence-based image classification methods for diagnosis of skin cancer: Challenges and opportunities	✓	Comparison of different evaluation criteria of different methods

(42)	State-of-the-Art Machine Learning Techniques for Diagnosis of Alzheimer's Disease from MR-Images: A Systematic Review	✓	Comparison of different evaluation criteria of different methods
(43)	Diagnostic support for selected neuromuscular diseases using answerpattern recognition and data mining techniques: A proof of concept multicenter prospective trial	✓	Comparison of different evaluation criteria of different methods
(44)	Digital natives' preferences on mobile artificial intelligence apps for skin cancer diagnostics: Survey study	×(3)	
(45)	A review on lung cancer diagnosis using data mining algorithms	✓	Comparison of different evaluation criteria of different methods
(46)	Current status and future perspective of artificial intelligence applications in endoscopic diagnosis and management of gastric cancer	✓	Comparison of different evaluation criteria of different methods
(47)	Diagnostic Accuracy of Machine Learning Models to Identify Congenital Heart Disease: A Meta-Analysis	×(2)	
(48)	Artificial Intelligence in Cervical Cancer Screening and Diagnosis	✓	Comparison of different evaluation criteria of different methods
(49)	Application of artificial intelligence-driven endoscopic screening and diagnosis of gastric cancer	✓	Comparison of different evaluation criteria of different methods
(50)	Artificial neural networks and prostate cancer-tools for diagnosis and management	×(3)	
(51)	Artificial intelligence in cancer diagnosis and prognosis: Opportunities and challenges	✓	Comparison of different evaluation criteria of different methods
(52)	The Value of Artificial Intelligence-Assisted Imaging in Identifying Diagnostic Markers of Sarcopenia in Patients with Cancer	✓	Comparison of different evaluation criteria of different methods
(53)	Establishing a second-generation artificial intelligence-based system for improving diagnosis, treatment, and monitoring of patients with rare diseases	×(3)	
(54)	Towards using cough for respiratory disease diagnosis by leveraging Artificial Intelligence: A survey	✓	Comparison of different evaluation criteria of different methods
(55)	The contribution of artificial intelligence to reducing the diagnostic delay in oral cancer	×(3)	
(56)	Clinical applications of artificial intelligence and machine learning in cancer diagnosis: looking into the future	✓	Report of different algorithms used in the field of prediction

(57)	Specifics of medical data mining for diagnosis aid: A survey	✓	Report of different algorithms used in the field of prediction
(58)	Machine Learning-Based Classification Models for Diagnosis of Diabetes	✓	Report of different algorithms used in the field of prediction
(59)	Diagnosis of Gastric Cancer Using Machine Learning Techniques in Healthcare Sector: A Survey	✓	Report of different algorithms used in the field of prediction
(60)	Artificial Intelligence for COVID-19 Detection in Medical Imaging—Diagnostic Measures and Wasting—A Systematic Umbrella Review	×(3)	
(61)	Legal and ethical considerations of artificial intelligence in skin cancer diagnosis	×(3)	
(62)	Artificial intelligence techniques that may be applied to primary care data to facilitate earlier diagnosis of cancer: Systematic review	✓	Comparison of different evaluation criteria of different methods
(63)	Current Evidence and Future Perspective of Accuracy of Artificial Intelligence Application for Early Gastric Cancer Diagnosis With Endoscopy: A Systematic and Meta-Analysis	×(2)	
(64)	Artificial Intelligence for Diagnosis and Gleason Grading of Prostate Cancer in Biopsies—Current Status and Next Steps	✓	Comparison of different evaluation criteria of different methods
(65)	Systematic review of artificial intelligence-based image diagnosis for inflammatory bowel disease	✓	Comparison of different evaluation criteria of different methods
(66)	Applied machine learning in cancer research: A systematic review for patient diagnosis, classification and prognosis	×(3)	
(67)	Convolutional neural networks for the diagnosis and prognosis of the coronavirus disease pandemic	×(3)	
(68)	A Systematic Review of Artificial Intelligence Techniques in Cancer Prediction and Diagnosis	✓	Comparison of different evaluation criteria of different methods
(69)	Implementation and Use of Disease Diagnosis Systems for Electronic Medical Records Based on Machine Learning: A Complete Review	✓	Comparison of different evaluation criteria of different methods
(70)	A survey on computer-aided diagnosis of brain disorders through MRI based on machine learning and data mining methodologies with an emphasis on Alzheimer disease diagnosis and the contribution of the multimodal fusion	✓	Comparison of different evaluation criteria of different methods

(71)	Recent Advancements and Future Prospects on E-Nose Sensors Technology and Machine Learning Approaches for Non-Invasive Diabetes Diagnosis: A Review	✓	Comparison of different evaluation criteria of different methods
(72)	Recent advances in blood-based and artificial intelligence-enhanced approaches for gastrointestinal cancer diagnosis	✓	Comparison of different evaluation criteria of different methods
(73)	A narrative review of artificial intelligence-assisted histopathologic diagnosis and decision-making for non-small cell lung cancer: achievements and limitations	✓	Comparison of different evaluation criteria of different methods
(74)	Use of multimodality imaging and artificial intelligence for diagnosis and prognosis of early stages of Alzheimer's disease	✓	Comparison of different evaluation criteria of different methods
(75)	Research Progress of Machine Learning and Deep Learning in Intelligent Diagnosis of the Coronary Atherosclerotic Heart Disease	✓	Comparison of different evaluation criteria of different methods
(76)	Artificial Intelligence–Assisted Endoscopic Diagnosis of Early Upper Gastrointestinal Cancer: A Systematic Review and Meta-Analysis	×(2)	
(77)	Artificial intelligence in cancer diagnostics and therapy: Current perspectives	✓	Comparison of different evaluation criteria of different methods
(78)	A review of fuzzy environmental study in medical diagnosis system	✓	Description of the process and the rule base of fuzzy systems
(79)	...and Beyond: Fuzzy logic in medical diagnosis. Studies in Fuzziness and Soft Computing2008.	×(3)	
(80)	Machine Learning for the Diagnosis of Parkinson's Disease: A Review of Literature	✓	Comparison of different evaluation criteria of different methods
(81)	Artificial intelligence for disease diagnosis and risk prediction in nuclear cardiology	✓	The error calculation of different ML algorithms
(82)	Artificial intelligence in disease diagnostics: A critical review and classification on the current state of research guiding future direction	✓	Comparison of different evaluation criteria of different methods
(83)	Machine learning techniques for diagnosis of alzheimer disease, mild cognitive disorder, and other types of dementia	✓	Comparison of different evaluation criteria of different methods
(84)	Artificial intelligence in colorectal cancer screening, diagnosis and treatment. A new era	✓	Comparison of different evaluation criteria of different methods

(85)	The diagnostic accuracy of Artificial Intelligence-Assisted CT imaging in COVID-19 disease: A systematic review and meta-analysis	×(2)	
(86)	Machine learning methods for the diagnosis of chronic obstructive pulmonary disease in healthy subjects: Retrospective observational cohort study	✓	Evaluation of the importance of variables using ML algorithms
(87)	An application of pentagonal valued hesitant fuzzy set in medical diagnosis	✓	Description of the process and the rule base of fuzzy systems
(88)	Applications of machine learning to diagnosis and treatment of neurodegenerative diseases	✓	Report of different algorithms used in the field of disease diagnosis
(89)	Denouements of machine learning and multimodal diagnostic classification of Alzheimer's disease	✓	Comparison of different evaluation criteria of different methods
(90)	Recent technical development of artificial intelligence for diagnostic medical imaging	✓	Report of data mining essential process steps in image processing
(91)	Artificial intelligence in liver diseases: Improving diagnostics, prognostics and response prediction	✓	Comparison of different evaluation criteria of different methods
(92)	Diagnostic accuracy of different machine learning algorithms for breast cancer risk calculation: A meta-analysis	×(2)	
(93)	Deep convolutional neural networks for computer-aided breast cancer diagnostic: a survey	✓	Comparison of different evaluation criteria of different methods
(94)	Recent advancement in cancer diagnosis using machine learning and deep learning techniques: A comprehensive review	✓	Comparison of different evaluation criteria of different methods
(95)	Artificial intelligence techniques support nuclear medicine modalities to improve the diagnosis of Parkinson's disease and Parkinsonian syndromes	✓	Comparison of different evaluation criteria of different methods
(96)	Artificial intelligence technologies empowering identification of novel diagnostic molecular markers in gastric cancer	×(3)	
(97)	Methodologic guide for evaluating clinical performance and effect of artificial intelligence technology for medical diagnosis and prediction	×(2)	
(98)	Solving medical diagnostic problem in intuitionistic fuzzy sets using new distance measure	×(2)	

(99)	Artificial Intelligence in the Diagnosis of Oral Diseases: Applications and Pitfalls	×(2)	
(100)	Applications of artificial intelligence for the diagnosis of gastrointestinal diseases	✓	Comparison of different evaluation criteria of different methods
(101)	Combining artificial neural networks and transrectal ultrasound in the diagnosis of prostate cancer	✓	Comparison of different evaluation criteria of different methods
(102)	Artificial intelligence (AI) impacting diagnosis of glaucoma and understanding the regulatory aspects of AI-based software as medical device	✓	Comparison of different evaluation criteria of different methods
(103)	Towards development of a novel universal medical diagnostic method: Raman spectroscopy and machine learning	×(3)	
(104)	A review on recent advancements in diagnosis and classification of cancers using artificial intelligence	✓	Comparison of different evaluation criteria of different methods
(105)	Artificial intelligence in the diagnosis and management of colorectal cancer liver metastases	✓	Comparison of different evaluation criteria of different methods
(106)	ASIC design of a digital fuzzy system on chip for medical diagnostic applications	×(2)	
(107)	Artificial intelligence methods for the diagnosis of breast cancer by image processing: A review	✓	Comparison of different evaluation criteria of different methods
(108)	Machine learning techniques for malaria disease diagnosis - A review	✓	Report of different algorithms used in the field of disease diagnosis
(109)	Machine Learning for Detection and Diagnosis of Disease	✓	Comparison of different evaluation criteria of different methods
(110)	A Systematic Review of Artificial Intelligence (AI) Based Approaches for the Diagnosis of Parkinson’s Disease	✓	Comparison of different evaluation criteria of different methods
(111)	Current trends in machine-learning methods applied to spectroscopic cancer diagnosis	✓	Comparison of different evaluation criteria of different methods
(112)	Machine Learning Methods for Computer-Aided Breast Cancer Diagnosis Using Histopathology: A Narrative Review	✓	Performance comparison of data mining algorithms
(113)	Artificial intelligence: Its use in medical diagnosis	✓	Performance comparison of data mining algorithms

(114)	Artificial intelligence versus clinicians in disease diagnosis: Systematic review	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(115)	Clinical application of machine learning-based artificial intelligence in the diagnosis, prediction, and classification of cardiovascular diseases	✓	Comparison of different evaluation criteria of different methods
(116)	Image analysis and artificial intelligence in infectious disease diagnostics	×(3)	
(117)	Machine learning modeling from omics data as prospective tool for improvement of inflammatory bowel disease diagnosis and clinical classifications	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(118)	Artificial Intelligence in Magnetic Resonance Imaging–based Prostate Cancer Diagnosis: Where Do We Stand in 2021?	✓	Comparison of different evaluation criteria of different methods
(119)	Machine learning techniques for screening and diagnosis of diabetes: A survey	✓	Comparison of different evaluation criteria of different methods
(120)	Artificial intelligence compared to radiologists for the initial diagnosis of prostate cancer on magnetic resonance imaging: A systematic review and recommendations for future studies	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(121)	Artificial intelligence in medical diagnosis	✓	Report of different algorithms used in the field of disease diagnosis
(122)	Application of Artificial Intelligence in the Diagnosis and Management of Corneal Diseases	×(3)	
(123)	Current applications of artificial intelligence combined with urine detection in disease diagnosis and treatment	×(3)	
(124)	Artificial intelligence for diagnosis of inherited retinal disease: An exciting opportunity and one step forward	×(3)	
(125)	Role of artificial intelligence in the diagnosis and management of kidney disease: applications to chronic kidney disease and acute kidney injury	✓	Report of different algorithms used in the field of disease diagnosis
(126)	More than Meets the Eye: Using Textural Analysis and Artificial Intelligence as Decision Support Tools in Prostate Cancer Diagnosis—A Systematic Review	✓	Report of different algorithms used in the field of disease diagnosis

(127)	Lung nodule diagnosis and cancer histology classification from computed tomography data by convolutional neural networks: A survey	✓	Comparison of different evaluation criteria of different methods
(128)	Computational Radiology in Breast Cancer Screening and Diagnosis Using Artificial Intelligence	×(3)	
(129)	An intelligent system for diagnosis of the heart valve diseases with wavelet packet neural networks	×(3)	
(130)	Modern diagnosis of early esophageal cancer: From blood biomarkers to advanced endoscopy and artificial intelligence	✓	Comparison of different evaluation criteria of different methods
(131)	Systematic review with meta-analysis: artificial intelligence in the diagnosis of oesophageal diseases	✓	Comparison of different evaluation criteria of different methods
(132)	Artificial intelligence in the diagnosis of upper gastrointestinal diseases	✓	Comparison of different evaluation criteria of different methods
(133)	Utilization of Artificial Intelligence in Disease Prevention: Diagnosis, Treatment, and Implications for the Healthcare Workforce	×(3)	
(134)	An application of artificial intelligence to diagnostic imaging of spine disease: Estimating spinal alignment from moiré images	×(3)	
(135)	Comparison of Diagnosis Accuracy between a Backpropagation Artificial Neural Network Model and Linear Regression in Digestive Disease Patients: An Empirical Research	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(136)	System diagnosis of coronary heart disease using a combination of dimensional reduction and data mining techniques: A review	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(137)	An Evolution Gaining Momentum—The Growing Role of Artificial Intelligence in the Diagnosis and Treatment of Spinal Diseases	×(3)	
(138)	Application of Artificial Intelligence in Early Gastric Cancer Diagnosis	✓	Comparison of different evaluation criteria of different methods
(139)	Use of Magnetic Resonance Imaging and Artificial Intelligence in Studies of Diagnosis of Parkinson's Disease	✓	Comparison of different evaluation criteria of different methods
(140)	The perspectives of biomarker-based electrochemical immunosensors, artificial intelligence and the Internet of Medical Things toward COVID-19 diagnosis and management	×(3)	

(141)	The diagnostic accuracy of artificial intelligence in thoracic diseases: A protocol for systematic review and meta-analysis	×(2)	
(142)	Machine learning techniques for breast cancer computer aided diagnosis using different image modalities: A systematic review	✓	Comparison of different evaluation criteria of different methods
(143)	Lesion-based convolutional neural network in diagnosis of early gastric cancer	×(3)	
(144)	Machine learning with applications in breast cancer diagnosis and prognosis	✓	Comparison of different evaluation criteria of different methods
(145)	Mining imaging and clinical data with machine learning approaches for the diagnosis and early detection of Parkinson's disease	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(146)	The Diagnostic Performance of Machine Learning-Based Radiomics of DCE-MRI in Predicting Axillary Lymph Node Metastasis in Breast Cancer: A Meta-Analysis	×(2)	
(147)	Diagnosis of Coronavirus Disease 2019 Pneumonia by Using Chest Radiography: Value of Artificial Intelligence	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(148)	Automation of literature screening using machine learning in medical evidence synthesis: a diagnostic test accuracy systematic review protocol	×(3)	
(149)	Application of artificial intelligence in the diagnosis and prognostic prediction of ovarian cancer	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(150)	Artificial intelligence in echocardiography: detection, functional evaluation, and disease diagnosis	×(3)	
(151)	A Technical Review of Convolutional Neural Network-Based Mammographic Breast Cancer Diagnosis	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(152)	Modern Machine-Learning Predictive Models for Diagnosing Infectious Disease	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods

(153)	Deep learning beyond cats and dogs: Recent advances in diagnosing breast cancer with deep neural networks	✓	Comparison of different evaluation criteria of different methods
(154)	Will Artificial Intelligence Replace the Movement Disorders Specialist for Diagnosing and Managing Parkinson's Disease?	×(3)	
(155)	Accuracy of ultrasonic artificial intelligence in diagnosing benign and malignant breast diseases A protocol for systematic review and meta-analysis	×(2)	
(156)	Artificial intelligence models for diagnosing gingivitis and periodontal disease: A systematic review	✓	Report of different algorithms used in the field of disease diagnosis
(157)	Coronavirus-related Disease Pandemic: A Review on Machine Learning Approaches and Treatment Trials on Diagnosed Population for Future Clinical Decision Support	✓	Report of different algorithms used in the field of disease diagnosis
(158)	The performance of artificial intelligence-driven technologies in diagnosing mental disorders: an umbrella review	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(159)	Using artificial intelligence for improving stroke diagnosis in emergency departments: a practical framework	×(3)	
(160)	Artificial intelligence and computer-aided diagnosis in colonoscopy: current evidence and future directions	✓	Comparison of different evaluation criteria of different methods
(161)	Neuroimaging and Machine Learning for Dementia Diagnosis: Recent Advancements and Future Prospects	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(162)	Machine learning approaches in COVID-19 diagnosis, mortality, and severity risk prediction: A review	✓	Comparison of different evaluation criteria of different methods
(163)	Machine Learning and Deep Learning Applications in Multiple Myeloma Diagnosis, Prognosis, and Treatment Selection	✓	Report of different algorithms used in the field of disease diagnosis
(164)	Diagnosis-Based Hybridization of Multimedical Tests and Sociodemographic Characteristics of Autism Spectrum Disorder Using Artificial Intelligence and Machine Learning Techniques: A Systematic Review	✓	Comparison of different evaluation criteria of different methods
(165)	Artificial intelligence technology for diagnosing COVID-19 cases: a review of substantial issues	×(3)	

(166)	Application and Development of Artificial Intelligence and Intelligent Disease Diagnosis	✓	Report of different algorithms used in the field of disease diagnosis
(167)	Computational neural network in melanocytic lesions diagnosis: artificial intelligence to improve diagnosis in dermatology?	×(3)	
(168)	Solid-State Nanopore Platform Integrated with Machine Learning for Digital Diagnosis of Virus Infection	×(3)	
(169)	Artificial Intelligence in Surveillance, Diagnosis, Drug Discovery and Vaccine Development against COVID-19	×(3)	
(170)	COVID-19 Diagnosis: A Review of Rapid Antigen, RT-PCR and Artificial Intelligence Methods	✓	Comparison of different evaluation criteria of different methods
(171)	Application of Artificial Intelligence in COVID-19 Diagnosis and Therapeutics	×(3)	
(172)	The role of neural artificial intelligence for diagnosis and treatment planning in endodontics: A qualitative review	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(173)	Artificial Intelligence and the Future of Diagnostic and Therapeutic Radiopharmaceutical Development:: In Silico Smart Molecular Design	×(3)	
(174)	Artificial intelligence for the diagnosis of lymph node metastases in patients with abdominopelvic malignancy: A systematic review and meta-analysis	×(2)	
(175)	Artificial intelligence in digital pathology - new tools for diagnosis and precision oncology	✓	Report of different algorithms used in the field of disease diagnosis
(176)	An insight into diagnosis of depression using machine learning techniques: a systematic review	✓	Comparison of different evaluation criteria of different methods
(177)	Non-occlusive mesenteric ischemia: Diagnostic challenges and perspectives in the era of artificial intelligence	×(3)	
(178)	Barriers of artificial intelligence implementation in the diagnosis of obstructive sleep apnea	×(3)	
(179)	Artificial intelligence for improving sickle cell retinopathy diagnosis and management	×(3)	

(180)	The potential application of artificial intelligence for diagnosis and management of glaucoma in adults	✓	Comparison of different evaluation criteria of different methods
(181)	Machine Learning in Diagnosing Middle Ear Disorders Using Tympanic Membrane Images: A Meta-Analysis	×(2)	
(182)	How is test laboratory data used and characterised by machine learning models? A systematic review of diagnostic and prognostic models developed for COVID-19 patients using only laboratory data	✓	Report of different algorithms used in the field of disease diagnosis
(183)	Potential Role of Artificial Intelligence in Cardiac Magnetic Resonance Imaging: Can It Help Clinicians in Making a Diagnosis?	✓	Comparison of different evaluation criteria of different methods
(184)	Can Autism Be Diagnosed with Artificial Intelligence? A Narrative Review	✓	Comparison of different evaluation criteria of different methods
(185)	Narrative review of artificial intelligence in diabetic macular edema: Diagnosis and predicting treatment response using optical coherence tomography	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(186)	Artificial intelligence for diagnostic purposes: principles, procedures and limitations	×(3)	
(187)	Artificial intelligence for forecasting and diagnosing COVID-19 pandemic: A focused review	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(188)	Artificial intelligence application in diagnostic gastrointestinal endoscopy - Deus ex machina?	×(3)	
(189)	Acquaintance to Artificial Neural Networks and use of artificial intelligence as a diagnostic tool for tuberculosis: A review	✓	Report of different algorithms used in the field of disease diagnosis
(190)	Artificial Intelligence and Computer Aided Diagnosis in Chronic Low Back Pain: A Systematic Review	✓	Comparison of different evaluation criteria of different methods
(191)	Managing Boundary Uncertainty in Diagnosing the Patients of Rural Area Using Fuzzy and Rough Set	✓	Comparison of different evaluation criteria of different methods
(192)	Fuzzy Classification Methods Based Diagnosis of Parkinson's disease from Speech Test Cases	✓	Comparison of different evaluation criteria of different methods
(193)	Machine learning techniques in a structural and functional MRI diagnostic approach in schizophrenia: a systematic review	✓	- Performance comparison of data mining algorithms

			- Comparison of different evaluation criteria of different methods
(194)	Computer-Aided Diagnosis of Coal Workers' Pneumoconiosis in Chest X-ray Radiographs Using Machine Learning: A Systematic Literature Review	✓	Comparison of different evaluation criteria of different methods
(195)	Systematic review and meta-analysis: Artificial intelligence for the diagnosis of gastric precancerous lesions and Helicobacter pylori infection	×(2)	
(196)	Artificial intelligence in medicine and cardiac imaging: harnessing big data and advanced computing to provide personalized medical diagnosis and treatment	×(3)	
(197)	Application of Artificial Intelligence for Diagnosis and Risk Stratification in NAFLD and NASH: The State of the Art	✓	Comparison of different evaluation criteria of different methods
(198)	Development of an expert system as a diagnostic support of cervical cancer in atypical glandular cells, based on fuzzy logics and image interpretation	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(199)	Application of Big Data and Artificial Intelligence in COVID-19 Prevention, Diagnosis, Treatment and Management Decisions in China	×(3)	
(200)	A Hybrid Human-Machine Learning Approach for Screening Prostate Biopsies Can Improve Clinical Efficiency Without Compromising Diagnostic Accuracy	×(2)	
(201)	Novel Uses and Challenges of Artificial Intelligence in Diagnosing and Managing Eyes with High Myopia and Pathologic Myopia	✓	Comparison of different evaluation criteria of different methods
(202)	Artificial intelligence to aid detection and diagnostic accuracy of mood disorders and predict suicide risk: A systematic review	✓	Comparison of different evaluation criteria of different methods
(203)	Enhancing Diagnosis Through Technology: Decision Support, Artificial Intelligence, and Beyond	×(3)	
(204)	Machine Learning Methods for Diagnosing Autism Spectrum Disorder and Attention- Deficit/Hyperactivity Disorder Using Functional and Structural MRI: A Survey	✓	Comparison of different evaluation criteria of different methods
(205)	Development and Application of Artificial Intelligence in Auxiliary TCM Diagnosis	×(3)	

(206)	Machine learning for the prediction of sepsis: a systematic review and meta-analysis of diagnostic test accuracy	×(2)	
(207)	Artificial intelligence for MRI diagnosis of joints: a scoping review of the current state-of-the-art of deep learning-based approaches	✓	Comparison of different evaluation criteria of different methods
(208)	Artificial Intelligence and COVID-19 Using Chest CT Scan and Chest X-ray Images: Machine Learning and Deep Learning Approaches for Diagnosis and Treatment	✓	Comparison of different evaluation criteria of different methods
(209)	Bladder cancer in the time of machine learning: Intelligent tools for diagnosis and management	✓	Comparison of different evaluation criteria of different methods
(210)	New Frontiers: An Update on Computer-Aided Diagnosis for Breast Imaging in the Age of Artificial Intelligence	×(3)	
(211)	Artificial intelligence in computer-aided diagnosis of abdomen diseases	×(3)	
(212)	Artificial Intelligence and Its Application to Minimal Hepatic Encephalopathy Diagnosis	✓	Comparison of different evaluation criteria of different methods
(213)	Application of machine learning in understanding plant virus pathogenesis: trends and perspectives on emergence, diagnosis, host-virus interplay and management	✓	Comparison of different evaluation criteria of different methods
(214)	The Role of Artificial Intelligence in the Diagnosis and Prognosis of Renal Cell Tumors	✓	Comparison of different evaluation criteria of different methods
(215)	Artificial intelligence for early diagnosis of lung cancer through incidental nodule detection in low- and middle-income countries-acceleration during the COVID-19 pandemic but here to stay	✓	Comparison of different evaluation criteria of different methods
(216)	Application of artificial intelligence in diagnosis of pancreatic malignancies by endoscopic ultrasound: a systemic review	✓	Comparison of different evaluation criteria of different methods
(217)	The Use of Artificial Intelligence Algorithms in the Diagnosis of Urinary Tract Infections-A Literature Review	✓	Comparison of different evaluation criteria of different methods
(218)	Diagnostic classification of cancer using DNA microarrays and artificial intelligence	✓	Comparison of different evaluation criteria of different methods
(219)	Overcome support vector machine diagnosis overfitting	✓	Comparison of different evaluation criteria of different methods
(220)	Artificial intelligence in diagnostic imaging: impact on the radiography profession	×(3)	

(221)	Improving DCIS diagnosis and predictive outcome by applying artificial intelligence	×(3)	
(222)	Artificial Intelligence in Prenatal Ultrasound Diagnosis	✓	Comparison of different evaluation criteria of different methods
(223)	Fuzzy logic and causal reasoning with an 'n' of 1 for diagnosis and treatment of the stroke patient	×(3)	
(224)	The role of machine learning applications in diagnosing and assessing critical and non-critical CHD: a scoping review	✓	Comparison of different evaluation criteria of different methods
(225)	Machine Learning in Ultrasound Computer-Aided Diagnostic Systems: A Survey	✓	Comparison of different evaluation criteria of different methods
(226)	Artificial intelligence in the diagnosis of COVID-19: challenges and perspectives	✓	Comparison of different evaluation criteria of different methods
(227)	The Role of Artificial Intelligence in Early Cancer Diagnosis	✓	Report of different algorithms used in the field of disease diagnosis
(228)	Role of artificial intelligence in the diagnosis of oesophageal neoplasia: 2020 an endoscopic odyssey	✓	Comparison of different evaluation criteria of different methods
(229)	The Role of Artificial Intelligence in the Diagnosis and Management of Glaucoma	✓	Report of different algorithms used in the field of disease diagnosis
(230)	The Role of Machine Learning in Diagnosing Bipolar Disorder: Scoping Review	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(231)	Application of artificial intelligence in the diagnosis and treatment of hepatocellular carcinoma: A review	✓	Comparison of different evaluation criteria of different methods
(232)	A Survey on Mathematical, Machine Learning and Deep Learning Models for COVID-19 Transmission and Diagnosis	✓	Report of different algorithms used in the field of disease diagnosis
(233)	Machine Learning Techniques for Differential Diagnosis of Vertigo and Dizziness: A Review	✓	Comparison of different evaluation criteria of different methods
(234)	Artificial Intelligence/Machine Learning in Respiratory Medicine and Potential Role in Asthma and COPD Diagnosis	×(3)	

(235)	Machine Learning Applications of Surgical Imaging for the Diagnosis and Treatment of Spine Disorders: Current State of the Art	✓	Report of different algorithms used in the field of disease diagnosis
(236)	Machine Learning and Deep Learning Methods for Skin Lesion Classification and Diagnosis: A Systematic Review(236)	✓	Report of different algorithms used in the field of disease diagnosis
(237)	AI (artificial intelligence) in histopathology--from image analysis to automated diagnosis	×(3)	
(238)	Automated histologic diagnosis of CNS tumors with machine learning	×(3)	
(239)	Scope and performance of artificial intelligence technology in orthodontic diagnosis, treatment planning, and clinical decision-making - A systematic review	✓	Comparison of different evaluation criteria of different methods
(240)	Application and Performance of Artificial Intelligence Technology in Detection, Diagnosis and Prediction of Dental Caries (DC)-A Systematic Review	✓	Comparison of different evaluation criteria of different methods
(241)	Application and Performance of Artificial Intelligence Technology in Oral Cancer Diagnosis and Prediction of Prognosis: A Systematic Review	✓	Comparison of different evaluation criteria of different methods
(242)	Artificial intelligence for solid tumour diagnosis in digital pathology	✓	Comparison of different evaluation criteria of different methods
(243)	Machine learning approaches for pathologic diagnosis	×(3)	
(244)	Machine learning for medical diagnosis: history, state of the art and perspective	✓	Comparison of different evaluation criteria of different methods
(245)	Co-designing diagnosis: Towards a responsible integration of Machine Learning decision-support systems in medical diagnostics	×(3)	
(246)	Artificial intelligence and computer-aided diagnosis for colonoscopy: where do we stand now?	✓	Comparison of different evaluation criteria of different methods
(247)	Regulatory Frameworks for Development and Evaluation of Artificial Intelligence-Based Diagnostic Imaging Algorithms: Summary and Recommendations	✓	Report of different algorithms used in the field of disease diagnosis
(248)	Application of Artificial Intelligence in Early Diagnosis of Spontaneous Preterm Labor and Birth	✓	Comparison of different evaluation criteria of different methods

(249)	Artificial intelligence in diagnosis of knee osteoarthritis and prediction of arthroplasty outcomes: a review	✓	Comparison of different evaluation criteria of different methods
(250)	Artificial intelligence in the diagnosis of cirrhosis and portal hypertension	✓	Report of different algorithms used in the field of disease diagnosis
(251)	Artificial intelligence-aided decision support in paediatrics clinical diagnosis: development and future prospects	×(3)	
(252)	Development of artificial intelligence technology in diagnosis, treatment, and prognosis of colorectal cancer	✓	Report of different algorithms used in the field of disease diagnosis
(253)	Diagnosis of Onychomycosis: From Conventional Techniques and Dermoscopy to Artificial Intelligence	✓	Comparison of different evaluation criteria of different methods
(254)	Artificial intelligence technology applications in the pathologic diagnosis of the gastrointestinal tract	✓	Comparison of different evaluation criteria of different methods
(255)	Artificial Intelligence-based methods in head and neck cancer diagnosis: an overview	✓	Report of different algorithms used in the field of disease diagnosis
(256)	Machine Learning in Action: Stroke Diagnosis and Outcome Prediction	✓	Comparison of different evaluation criteria of different methods
(257)	Artificial intelligence in the diagnosis of low back pain	✓	Report of different algorithms used in the field of disease diagnosis
(258)	A Comprehensive Review of Computer-Aided Diagnosis of Major Mental and Neurological Disorders and Suicide: A Biostatistical Perspective on Data Mining	✓	Comparison of different evaluation criteria of different methods
(259)	Image-Based Cardiac Diagnosis With Machine Learning: A Review	✓	- Performance comparison of data mining algorithms - Comparison of different evaluation criteria of different methods
(260)	Artificial Intelligence-assisted Prostate Cancer Diagnosis: Radiologic-Pathologic Correlation	×(3)	
(261)	The impact of artificial intelligence in the diagnosis and management of glaucoma	✓	Comparison of different evaluation criteria of different methods
(262)	Applications of machine learning and high-dimensional visualization in cancer detection, diagnosis, and management	×(3)	
(263)	The diagnostic and prognostic value of artificial intelligence and artificial neural networks in spinal surgery : a narrative review	✓	Comparison of different evaluation criteria of different methods

(264)	Imaging and machine learning techniques for diagnosis of Alzheimer's disease	✓	Report of different algorithms used in the field of disease diagnosis
(265)	Diagnosis of COVID-19 Using Machine Learning and Deep Learning: A Review	✓	Comparison of different evaluation criteria of different methods
(266)	Machine Learning Models for Image-Based Diagnosis and Prognosis of COVID-19: Systematic Review	✓	Examination of different methods of fine-tuning the parameters of neural networks
(267)	Accuracy of Machine Learning Algorithms for the Diagnosis of Autism Spectrum Disorder: Systematic Review and Meta-Analysis of Brain Magnetic Resonance Imaging Studies	×(2)	
(268)	Oral White Lesions: An Updated Clinical Diagnostic Decision Tree	×(3)	
(269)	Diagnostic Features of Common Oral Ulcerative Lesions: An Updated Decision Tree	×(3)	
(270)	Machine Learning Applications in the Diagnosis of Benign and Malignant Hematological Diseases	✓	Report of different algorithms used in the field of disease diagnosis
(271)	A Literature Review on the Use of Artificial Intelligence for the Diagnosis of COVID-19 on CT and Chest X-ray	✓	Comparison of different evaluation criteria of different methods
(272)	Artificial Intelligence for the Future Radiology Diagnostic Service	×(3)	
(273)	Artificial intelligence in the diagnosis of multiple sclerosis: A systematic review	✓	Comparison of different evaluation criteria of different methods
(274)	Artificial intelligence in the diagnosis and management of arrhythmias	✓	Report of data mining essential process steps in image processing
(275)	Diagnostic Accuracy of Artificial Intelligence and Computer-Aided Diagnosis for the Detection and Characterization of Colorectal Polyps: Systematic Review and Meta-analysis	×(2)	
(276)	Machine learning: applications of artificial intelligence to imaging and diagnosis	×(3)	
(277)	Machine learning (ML) for the diagnosis of autism spectrum disorder (ASD) using brain imaging	✓	Comparison of different evaluation criteria of different methods
(278)	Clinical applications of machine learning in the diagnosis, classification, and prediction of heart failure	✓	Comparison of different evaluation criteria of different methods

(279)	Explainable artificial intelligence (XAI): closing the gap between image analysis and navigation in complex invasive diagnostic procedures	×(3)	
(280)	Review on Diagnosis of COVID-19 from Chest CT Images Using Artificial Intelligence	✓	Comparison of different evaluation criteria of different methods
(281)	Artificial Intelligence and Machine Learning in the Diagnosis and Management of Gastroenteropancreatic Neuroendocrine Neoplasms-A Scoping Review	✓	Report of different algorithms used in the field of disease diagnosis
(282)	Artificial intelligence in clinical applications for lung cancer: diagnosis, treatment and prognosis	✓	Report of different algorithms used in the field of disease diagnosis
(283)	Evolutionary fuzzy modeling human diagnostic decisions	×(2)	
(284)	Machine Learning Techniques for the Diagnosis of Attention-Deficit/Hyperactivity Disorder from Magnetic Resonance Imaging: A Concise Review	×(3)	
(285)	Application of artificial intelligence for diagnosis of pancreatic ductal adenocarcinoma by EUS: A systematic review and meta-analysis	×(2)	
(286)	Application of Artificial Intelligence in Diagnosis of Craniopharyngioma	✓	Report of different algorithms used in the field of disease diagnosis
(287)	Convolution neural network for the diagnosis of wireless capsule endoscopy: a systematic review and meta-analysis	×(2)	
(288)	Applications of Artificial Intelligence in Screening, Diagnosis, Treatment, and Prognosis of Colorectal Cancer	✓	Comparison of different evaluation criteria of different methods
(289)	Artificial Intelligence Techniques for Automated Diagnosis of Neurological Disorders	✓	Comparison of different evaluation criteria of different methods
(290)	Systematic review of dermoscopy and digital dermoscopy/ artificial intelligence for the diagnosis of melanoma	✓	Comparison of sensitivity and specificity of different methods
(291)	Comparison of Conventional Statistical Methods with Machine Learning in Medicine: Diagnosis, Drug Development, and Treatment	×(3)	
(292)	Machine learning and clinical epigenetics: a review of challenges for diagnosis and classification	✓	Comparison of different evaluation criteria of different methods

(293)	Scope and challenges of machine learning-based diagnosis and prognosis in clinical dentistry: A literature review	✓	Comparison of different evaluation criteria of different methods
(294)	Machine Learning-Based Behavioral Diagnostic Tools for Depression: Advances, Challenges, and Future Directions	×(3)	
(295)	An overview of artificial intelligence techniques for diagnosis of Schizophrenia based on magnetic resonance imaging modalities: Methods, challenges, and future works	✓	Comparison of different evaluation criteria of different methods
(296)	Machine learning applications in the diagnosis of leukemia: Current trends and future directions	✓	Comparison of different evaluation criteria of different methods
(297)	Artificial intelligence and complex statistical modeling in glaucoma diagnosis and management	✓	Comparison of different evaluation criteria of different methods
(298)	Artificial intelligence for a personalized diagnosis and treatment of atrial fibrillation	×(3)	
(299)	Machine learning: at the heart of failure diagnosis	✓	Comparison of different evaluation criteria of different methods
(300)	Artificial intelligence, machine learning, computer-aided diagnosis, and radiomics: advances in imaging towards to precision medicine	×(3)	
(301)	Artificial Intelligence in Retinopathy of Prematurity Diagnosis	✓	Report of different algorithms used in the field of disease diagnosis
(302)	Artificial Intelligence in Diagnostic Imaging: Status Quo, Challenges, and Future Opportunities	×(3)	
(303)	Review of Artificial Intelligence Techniques in Imaging Data Acquisition, Segmentation, and Diagnosis for COVID-19	✓	Report of different algorithms used in the field of disease diagnosis
(304)	Computer-aided diagnosis and artificial intelligence in clinical imaging	×(2)	
(305)	Pituitary Tumors in the Computational Era, Exploring Novel Approaches to Diagnosis, and Outcome Prediction with Machine Learning	✓	Report of different algorithms used in the field of disease diagnosis
(306)	The Use of Artificial Intelligence in Screening and Diagnosis of Autism Spectrum Disorder: A Literature Review	✓	Comparison of different evaluation criteria of different methods
(307)	Development of New Diagnostic Techniques - Machine Learning	×(2)	

(308)	Rare disease diagnosis: A review of web search, social media and large-scale data-mining approaches	×(3)	
(309)	Uses of Different Machine Learning Algorithms for Diagnosis of Dental Caries	✓	Comparison of different evaluation criteria of different methods
(310)	Discovering Knee Osteoarthritis Imaging Features for Diagnosis and Prognosis: Review of Manual Imaging Grading and Machine Learning Approaches	×(3)	
(311)	Heart Failure: Diagnosis, Severity Estimation and Prediction of Adverse Events Through Machine Learning Techniques	✓	Comparison of different evaluation criteria of different methods
(312)	Machine Learning in Neurooncology Imaging: From Study Request to Diagnosis and Treatment	×(3)	
(313)	Artificial intelligence and machine learning for early detection and diagnosis of colorectal cancer in sub-Saharan Africa	×(3)	
(314)	Applications and challenges of artificial intelligence in diagnostic and interventional radiology	×(3)	
(315)	Application of machine learning in the diagnosis of axial spondyloarthritis	×(3)	
(316)	Practical Implementation of Artificial Intelligence-Based Deep Learning and Cloud Computing on the Application of Traditional Medicine and Western Medicine in the Diagnosis and Treatment of Rheumatoid Arthritis	×(3)	
(317)	Application of artificial intelligence to the diagnosis and therapy of colorectal cancer	✓	Comparison of different evaluation criteria of different methods
(318)	Current Advancement in Diagnosing Atrial Fibrillation by Utilizing Wearable Devices and Artificial Intelligence: A Review Study	×(3)	
(319)	The first use of artificial intelligence (AI) in the ER: triage not diagnosis	×(3)	
(320)	Artificial intelligence in dermatopathology: Diagnosis, education, and research	✓	Comparison of different evaluation criteria of different methods
(321)	Applications of artificial intelligence in the diagnosis and prediction of erectile dysfunction: a narrative review	✓	Comparison of different evaluation criteria of different methods
(322)	A Survey of Computer-Aided Tumor Diagnosis Based on Convolutional Neural Network	✓	Comparison of different evaluation criteria of different methods

(323)	Artificial intelligence in the diagnosis, treatment and prevention of urinary stones	✓	Comparison of different evaluation criteria of different methods
(324)	Artificial intelligence in the diagnosis and detection of heart failure: the past, present, and future	✓	Report of different algorithms used in the field of disease diagnosis
(325)	Diagnostic Accuracy of Endoscopic Ultrasound with Artificial Intelligence for Gastrointestinal Stromal Tumors: A Meta-analysis	×(2)	
(326)	Machine learning applications on neuroimaging for diagnosis and prognosis of epilepsy: A review	✓	Comparison of different evaluation criteria of different methods
(327)	How Should Artificial Intelligence Screen for Skin Cancer and Deliver Diagnostic Predictions to Patients?	×(2)	
(328)	Artificial Intelligence (AI) for Fracture Diagnosis: An Overview of Current Products and Considerations for Clinical Adoption, From the AJR Special Series on AI Applications	✓	Comparison of different evaluation criteria of different methods
(329)	Noninvasive early diagnosis of intestinal diseases based on artificial intelligence in genomics and microbiome	✓	Comparison of different evaluation criteria of different methods
(330)	Diagnostic accuracy and potential covariates of artificial intelligence for diagnosing orthopedic fractures: a systematic literature review and meta-analysis	×(2)	
(331)	Applications of Explainable Artificial Intelligence in Diagnosis and Surgery	✓	Comparison of different evaluation criteria of different methods
(332)	Diagnostic accuracy and potential covariates for machine learning to identify IDH mutations in glioma patients: evidence from a meta-analysis	×(2)	
(333)	Application of Artificial Intelligence on Psychological Interventions and Diagnosis: An Overview	×(3)	
(334)	Ultrasound for the Diagnosis of Biliary Atresia: From Conventional Ultrasound to Artificial Intelligence	×(3)	
(335)	Brain Tumor Diagnosis Using Machine Learning, Convolutional Neural Networks, Capsule Neural Networks and Vision Transformers, Applied to MRI: A Survey	✓	Comparison of different evaluation criteria of different methods
(336)	Role of biological Data Mining and Machine Learning Techniques in Detecting and Diagnosing the Novel Coronavirus (COVID-19): A Systematic Review	✓	Comparison of the Accuracy criterion of different data mining methods

(337)	Artificial Intelligence for the Prediction of Helicobacter Pylori Infection in Endoscopic Images: Systematic Review and Meta-Analysis Of Diagnostic Test Accuracy	×(2)	
(338)	Diagnostic Strategies for Breast Cancer Detection: From Image Generation to Classification Strategies Using Artificial Intelligence Algorithms	✓	Comparison of different evaluation criteria of different methods
(339)	Effectiveness of Artificial Intelligence Applications Designed for Endodontic Diagnosis, Decision-making, and Prediction of Prognosis: A Systematic Review	✓	Comparison of different evaluation criteria of different methods
(340)	The Accuracy of Artificial Intelligence in the Endoscopic Diagnosis of Early Gastric Cancer: Pooled Analysis Study	×(2)	
(341)	Diagnostic accuracy of current machine learning classifiers for age-related macular degeneration: a systematic review and meta-analysis	×(2)	
(342)	Diagnostic Performance of Artificial Intelligence-Centred Systems in the Diagnosis and Postoperative Surveillance of Upper Gastrointestinal Malignancies Using Computed Tomography Imaging: A Systematic Review and Meta-Analysis of Diagnostic Accuracy	×(2)	
(343)	Empirical assessment of bias in machine learning diagnostic test accuracy studies	✓	Comparison of the odds ratio criterion of different data mining methods
(344)	Machine learning and deep learning techniques to support clinical diagnosis of arboviral diseases: A systematic review	✓	Report of different algorithms used in the field of disease diagnosis
(345)	Machine learning techniques applied to mechanical fault diagnosis and fault prognosis in the context of real industrial manufacturing use-cases: a systematic literature review	✓	Report of different algorithms used in the field of disease diagnosis
(346)	Diversity in Machine Learning: A Systematic Review of Text-Based Diagnostic Applications	✓	Comparison of different evaluation criteria of different methods
(347)	Machine learning, medical diagnosis, and biomedical engineering research – commentary	✓	Comparison of different evaluation criteria of different methods
(348)	X-Ray Equipped with Artificial Intelligence: Changing the COVID-19 Diagnostic Paradigm during the Pandemic	✓	Comparison of different evaluation criteria of different methods
(349)	Diagnostic test accuracy of artificial intelligence analysis of cross-sectional imaging in pulmonary hypertension: a systematic literature review	✓	Comparison of different evaluation criteria of different methods

(350)	A systematic review of the diagnostic accuracy of artificial intelligence-based computer programs to analyze chest x-rays for pulmonary tuberculosis	✓	Comparison of sensitivity and specificity of different methods
(351)	Applications of machine learning for imaging-driven diagnosis of musculoskeletal malignancies-a scoping review	✓	Comparison of different evaluation criteria of different methods
(352)	A systematic review and meta-analysis of diagnostic performance and physicians' perceptions of artificial intelligence (AI)-assisted CT diagnostic technology for the classification of pulmonary nodules	✓	Comparison of different evaluation criteria of different methods
(353)	Artificial Intelligence for Diagnosis of Acute Coronary Syndromes: A Meta-analysis of Machine Learning Approaches	×(2)	
(354)	Machine Learning-Based Automated Diagnostic Systems Developed for Heart Failure Prediction Using Different Types of Data Modalities: A Systematic Review and Future Directions	✓	Comparison of different evaluation criteria of different methods
(355)	Artificial Intelligence for COVID-19 Detection in Medical Imaging-Diagnostic Measures and Wasting-A Systematic Umbrella Review	✓	Comparison of the number of used algorithms
(356)	Triage and priority-based healthcare diagnosis using artificial intelligence for autism spectrum disorder and gene contribution: A systematic review	✓	Comparison of different evaluation criteria of different methods
(357)	Machine Learning Versus Usual Care for Diagnostic and Prognostic Prediction in the Emergency Department: A Systematic Review	✓	Comparison of different evaluation criteria of different methods
(358)	Artificial Intelligence for Diagnosis and Gleason Grading of Prostate Cancer in Biopsies-Current Status and Next Steps	✓	Comparison of the efficiency of different data mining methods based on AUC criterion
(359)	Artificial intelligence in disease diagnosis: a systematic literature review, synthesizing framework and future research agenda	✓	Comparison of different evaluation criteria of different methods
(360)	Diagnostic Performance of Artificial Intelligence for Detection of Anterior Cruciate Ligament and Meniscus Tears: A Systematic Review	✓	Comparison of the Accuracy criterion of different data mining methods
(361)	Artificial Intelligence-Assisted Endoscopic Diagnosis of Early Upper Gastrointestinal Cancer: A Systematic Review and Meta-Analysis	×(2)	
(362)	Use of artificial intelligence in diagnosis of head and neck precancerous and cancerous lesions: A systematic review	×(3)	

(363)	Machine learning defined diagnostic criteria for differentiating pituitary metastasis from autoimmune hypophysitis in patients undergoing immune checkpoint blockade therapy	×(2)	
(364)	Artificial intelligence for disease diagnosis and risk prediction in nuclear cardiology	✓	Report of data mining essential process steps in image processing
(365)	Application of Machine Learning in Diagnosis of COVID-19 Through X-Ray and CT Images: A Scoping Review	✓	Comparison of different evaluation criteria of different methods
(366)	Accuracy of convolutional neural network-based artificial intelligence in diagnosis of gastrointestinal lesions based on endoscopic images: A systematic review and meta-analysis	×(2)	
(367)	Current applications of machine learning in the screening and diagnosis of glaucoma: a systematic review and Meta-analysis	×(2)	
(368)	Deep learning convolutional neural network algorithms for the early detection and diagnosis of dental caries on periapical radiographs: A systematic review	✓	Comparison of different evaluation criteria of different methods
(369)	Recent technical development of artificial intelligence for diagnostic medical imaging	×(3)	
(370)	Machine Learning-based Prediction Models for Diagnosis and Prognosis in Inflammatory Bowel Diseases: A Systematic Review	✓	Comparison of different evaluation criteria of different methods
(371)	Artificial intelligence technologies empowering identification of novel diagnostic molecular markers in gastric cancer	×(3)	
(372)	Machine learning of neuroimaging for assisted diagnosis of cognitive impairment and dementia: A systematic review	✓	Comparison of the Accuracy criterion of different data mining methods
(373)	A comparison of artificial intelligence versus radiologists in the diagnosis of thyroid nodules using ultrasonography: a systematic review and meta-analysis	×(2)	
(374)	Machine learning in the diagnosis and prognostic prediction of dental caries: a systematic review	✓	Comparison of sensitivity and specificity of different methods
(375)	rs-fMRI and machine learning for ASD diagnosis: a systematic review and meta-analysis	×(2)	
(376)	Diagnostic Accuracy of Machine Learning-Based Radiomics in Grading Gliomas: Systematic Review and Meta-Analysis	×(2)	

(377)	Application of Support Vector Machine on fMRI Data as Biomarkers in Schizophrenia Diagnosis: A Systematic Review	✓	Comparison of sensitivity and specificity of different methods
(378)	Systematic review of machine learning for diagnosis and prognosis in dermatology	✓	Comparison of different evaluation criteria of different methods
(379)	Prediction and Diagnosis of Venous Thromboembolism Using Artificial Intelligence Approaches: A Systematic Review and Meta-Analysis	×(2)	
(380)	Performance of deep neural network-based artificial intelligence method in diabetic retinopathy screening: a systematic review and meta-analysis of diagnostic test accuracy	×(2)	
(381)	An Evolution Gaining Momentum-The Growing Role of Artificial Intelligence in the Diagnosis and Treatment of Spinal Diseases	✓	Report of data mining essential process steps in image processing
(382)	Diagnostic accuracy of convolutional neural network-based endoscopic image analysis in diagnosing gastric cancer and predicting its invasion depth: a systematic review and meta-analysis	×(2)	
(383)	Reporting quality of studies using machine learning models for medical diagnosis: a systematic review	✓	Comparison of the number of used algorithms

Reference:

1. Abbas Q, Qureshi I, Yan J, Shaheed K. Machine Learning Methods for Diagnosis of Eye-Related Diseases: A Systematic Review Study Based on Ophthalmic Imaging Modalities. Archives of Computational Methods in Engineering. 2022.
2. Abdolali F, Shahroudnejad A, Amiri S, Hareendranathan AR, Jaremko JL, Noga M, et al. A systematic review on the role of artificial intelligence in sonographic diagnosis of thyroid cancer: Past, present and future. Frontiers in Biomedical Technologies. 2020;7(4):266-80.
3. Adamson AS, Welch HG. Machine learning and the cancer-diagnosis problem — No gold standard. New England Journal of Medicine. 2019;381(24):2285-7.
4. Aggarwal P, Alkhouri N. Artificial Intelligence in Nonalcoholic Fatty Liver Disease: A New Frontier in Diagnosis and Treatment. Clinical Liver Disease. 2021;17(6):392-7.
5. Ahmadi H, Gholamzadeh M, Shahmoradi L, Nilashi M, Rashvand P. Diseases diagnosis using fuzzy logic methods: A systematic and meta-analysis review. Computer methods and programs in biomedicine. 2018;161:145-72.
6. Ahmed FE. Artificial neural networks for diagnosis and survival prediction in colon cancer. Molecular Cancer. 2005;4.
7. Ahn JC, Connell A, Simonetto DA, Hughes C, Shah VH. Application of Artificial Intelligence for the Diagnosis and Treatment of Liver Diseases. Hepatology (Baltimore, Md). 2021;73(6):2546-63.
8. Ahsan MM, Luna SA, Siddique Z. Machine-Learning-Based Disease Diagnosis: A Comprehensive Review. Healthcare (Switzerland). 2022;10(3).
9. Ahsan MM, Siddique Z. Machine learning-based heart disease diagnosis: A systematic literature review. Artificial Intelligence in Medicine. 2022;128.
10. Alizadehsani R, Abdar M, Roshanzamir M, Khosravi A, Kebria PM, Khozeimeh F, et al. Machine learning-based coronary artery disease diagnosis: A comprehensive review. Computers in Biology and Medicine. 2019;111.
11. Alizadehsani R, Khosravi A, Roshanzamir M, Abdar M, Sarrafzadegan N, Shafie D, et al. Coronary artery disease detection using artificial intelligence techniques: A survey of trends, geographical differences and diagnostic features 1991–2020. Computers in Biology and Medicine. 2021;128.
12. Al-Rawi N, Sultan A, Rajai B, Shuaeeb H, Alnajjar M, Alketbi M, et al. The Effectiveness of Artificial Intelligence in Detection of Oral Cancer: AI AND ORAL CANCER DIAGNOSIS. International Dental Journal. 2022.
13. Banks G. Artificial intelligence in medical diagnosis: the INTERNIST/CADUCEUS approach. Critical reviews in medical informatics. 1986;1(1):23-54.
14. Battineni G, Sagaro GG, Chinatalapudi N, Amenta F. Applications of machine learning predictive models in the chronic disease diagnosis. Journal of personalized medicine. 2020;10(2).
15. Belić M, Bobić V, Badža M, Šolaja N, Đurić-Jovičić M, Kostić VS. Artificial intelligence for assisting diagnostics and assessment of Parkinson's disease—A review. Clinical neurology and neurosurgery. 2019;184.
16. Benameur N, Mahmoudi R, Zaid S, Arous Y, Hmida B, Bedoui MH. SARS-CoV-2 diagnosis using medical imaging techniques and artificial intelligence: A review. Clinical Imaging. 2021;76:6-14.
17. Berbís MA, Aneiros-Fernández J, Olivares FJM, Nava E, Luna A. Role of artificial intelligence in multidisciplinary imaging diagnosis of gastrointestinal diseases. World journal of gastroenterology. 2021;27(27):4395-412.
18. Bhavsar KA, Singla J, Al-Otaibi YD, Song OY, Zikria YB, Bashir AK. Medical diagnosis using machine learning: a statistical review. Computers, Materials and Continua. 2021;67(1):107-25.
19. Borhani S, Borhani R, Kajdacsy-Balla A. Artificial intelligence: A promising frontier in bladder cancer diagnosis and outcome prediction. Critical Reviews in Oncology/Hematology. 2022;171.
20. Caballé NC, Castillo-Sequera JL, Gómez-Pulido JA, Gómez-Pulido JM, Polo-Luque ML. Machine learning applied to diagnosis of human diseases: A systematic review. Applied Sciences (Switzerland). 2020;10(15).

21. Castaldo R, Cavaliere C, Soricelli A, Salvatore M, Pecchia L, Franzese M. Radiomic and genomic machine learning method performance for prostate cancer diagnosis: Systematic literature review. Journal of medical Internet research. 2021;23(4).
22. Chan EOT, Pradere B, Teoh JYC. The use of artificial intelligence for the diagnosis of bladder cancer: a review and perspectives. Current opinion in urology. 2021;31(4):397-403.
23. Chang CH, Lin CH, Lane HY. Machine learning and novel biomarkers for the diagnosis of alzheimer's disease. International journal of molecular sciences. 2021;22(5):1-12.
24. Chen C, Qin Y, Chen H, Zhu D, Gao F, Zhou X. A meta-analysis of the diagnostic performance of machine learning-based MRI in the prediction of axillary lymph node metastasis in breast cancer patients. Insights into imaging. 2021;12(1).
25. Chen HY, Ge P, Liu JY, Qu JL, Bao F, Xu CM, et al. Artificial intelligence: Emerging player in the diagnosis and treatment of digestive disease. World journal of gastroenterology. 2022;28(20):2152-62.
26. Chen L, Li J, Chang M. Cancer diagnosis and disease gene identification via statistical machine learning. Current Bioinformatics. 2020;15(9):956-62.
27. Chen ZH, Lin L, Wu CF, Li CF, Xu RH, Sun Y. Artificial intelligence for assisting cancer diagnosis and treatment in the era of precision medicine. Cancer Communications. 2021;41(11):1100-15.
28. Cimadamore A, Cheng L, Scarpelli M, Lopez-Beltran A, Montironi R. Digital diagnostics and artificial intelligence in prostate cancer treatment in 5 years from now. Translational Andrology and Urology. 2021;10(3):1499-505.
29. Das N, Topalovic M, Janssens W. Artificial intelligence in diagnosis of obstructive lung disease: Current status and future potential. Current Opinion in Pulmonary Medicine. 2018;24(2):117-23.
30. Djavanshir GR, Chen X, Yang W. A Review of Artificial Intelligence's Neural Networks (Deep Learning) Applications in Medical Diagnosis and Prediction. IT Professional. 2021;23(3):58-62.
31. Dumitrescu EA, Ungureanu BS, Cazacu IM, Florescu LM, Streba L, Croitoru VM, et al. Diagnostic Value of Artificial Intelligence-Assisted Endoscopic Ultrasound for Pancreatic Cancer: A Systematic Review and Meta-Analysis. Diagnostics. 2022;12(2).
32. Felmingham CM, Adler NR, Ge Z, Morton RL, Janda M, Mar VJ. The Importance of Incorporating Human Factors in the Design and Implementation of Artificial Intelligence for Skin Cancer Diagnosis in the Real World. American Journal of Clinical Dermatology. 2021;22(2):233-42.
33. Ferrante G, Licari A, Fasola S, Marseglia GL, La Grutta S. Artificial intelligence in the diagnosis of pediatric allergic diseases. Pediatric Allergy and Immunology. 2021;32(3):405-13.
34. Foster KR, Koprowski R, Skufca JD. Machine learning, medical diagnosis, and biomedical engineering research - commentary. Biomedical engineering online. 2014;13(1).
35. Gao J, Jiang Q, Zhou B, Chen D. Convolutional neural networks for computer-aided detection or diagnosis in medical image analysis: An overview. Mathematical Biosciences and Engineering. 2019;16(6):6536-61.
36. Gao L, Jiao T, Feng Q, Wang W. Application of artificial intelligence in diagnosis of osteoporosis using medical images: a systematic review and meta-analysis. Osteoporosis International. 2021;32(7):1279-86.
37. García-Pola M, Pons-Fuster E, Suárez-Fernández C, Seoane-Romero J, Romero-Méndez A, López-Jornet P. Role of artificial intelligence in the early diagnosis of oral cancer. A scoping review. Cancers. 2021;13(18).
38. Ghorbani R, Ghousi R. Predictive data mining approaches in medical diagnosis: A review of some diseases prediction. International Journal of Data and Network Science. 2019;3(2):47-70.
39. Giannakopoulou K, Roussaki I, Demestichas K. Internet of Things Technologies and Machine Learning Methods for Parkinson's Disease Diagnosis, Monitoring and Management: A Systematic Review. Sensors. 2022;22(5).
40. Goyal H, Mann R, Gandhi Z, Perisetti A, Ali A, Ali KA, et al. Scope of artificial intelligence in screening and diagnosis of colorectal cancer. Journal of clinical medicine. 2020;9(10):1-22.

41. Goyal M, Knackstedt T, Yan S, Hassanpour S. Artificial intelligence-based image classification methods for diagnosis of skin cancer: Challenges and opportunities. Computers in Biology and Medicine. 2020;127.
42. Goyal P, Rani R, Singh K. State-of-the-Art Machine Learning Techniques for Diagnosis of Alzheimer's Disease from MR-Images: A Systematic Review. Archives of Computational Methods in Engineering. 2021.
43. Grigull L, Lechner W, Petri S, Kollewe K, Dengler R, Mehmecke S, et al. Diagnostic support for selected neuromuscular diseases using answerpattern recognition and data mining techniques: A proof of concept multicenter prospective trial. BMC medical informatics and decision making. 2016;16(1).
44. Haggenmüller S, Krieghoff-Henning E, Jutzi T, Trapp N, Kiehl L, Utikal OS, et al. Digital natives' preferences on mobile artificial intelligence apps for skin cancer diagnostics: Survey study. JMIR mHealth and uHealth. 2021;9(8).
45. Heydari F, Rafsanjani M. A review on lung cancer diagnosis using data mining algorithms. Current medical imaging. 2021;17(1):16-26.
46. Hirasawa T, Ikenoyama Y, Ishioka M, Namikawa K, Horiuchi Y, Nakashima H, et al. Current status and future perspective of artificial intelligence applications in endoscopic diagnosis and management of gastric cancer. Digestive Endoscopy. 2021;33(2):263-72.
47. Hoodbhoy Z, Jiwani U, Sattar S, Salam R, Hasan B, Das JK. Diagnostic Accuracy of Machine Learning Models to Identify Congenital Heart Disease: A Meta-Analysis. Frontiers in artificial intelligence. 2021;4.
48. Hou X, Shen G, Zhou L, Li Y, Wang T, Ma X. Artificial Intelligence in Cervical Cancer Screening and Diagnosis. Frontiers in oncology. 2022;12.
49. Hsiao YJ, Wen YC, Lai WY, Lin YY, Yang YP, Chien Y, et al. Application of artificial intelligence-driven endoscopic screening and diagnosis of gastric cancer. World journal of gastroenterology. 2021;27(22):2979-93.
50. Hu X, Cammann H, Meyer HA, Miller K, Jung K, Stephan C. Artificial neural networks and prostate cancer-tools for diagnosis and management. Nature Reviews Urology. 2013;10(3):174-82.
51. Huang S, Yang J, Fong S, Zhao Q. Artificial intelligence in cancer diagnosis and prognosis: Opportunities and challenges. Cancer Letters. 2020;471:61-71.
52. Huang YT, Tsai YS, Lin PC, Yeh YM, Hsu YT, Wu PY, et al. The Value of Artificial Intelligence-Assisted Imaging in Identifying Diagnostic Markers of Sarcopenia in Patients with Cancer. Disease markers. 2022;2022.
53. Hurvitz N, Azmanov H, Kesler A, Ilan Y. Establishing a second-generation artificial intelligence-based system for improving diagnosis, treatment, and monitoring of patients with rare diseases. European Journal of Human Genetics. 2021;29(10):1485-90.
54. Ijaz A, Nabeel M, Masood U, Mahmood T, Hashmi MS, Posokhova I, et al. Towards using cough for respiratory disease diagnosis by leveraging Artificial Intelligence: A survey. Informatics in Medicine Unlocked. 2022;29.
55. Ilhan B, Guneri P, Wilder-Smith P. The contribution of artificial intelligence to reducing the diagnostic delay in oral cancer. Oral oncology. 2021;116.
56. Iqbal MJ, Javed Z, Sadia H, Qureshi IA, Irshad A, Ahmed R, et al. Clinical applications of artificial intelligence and machine learning in cancer diagnosis: looking into the future. Cancer cell international. 2021;21(1).
57. Itani S, Lecron F, Fortemps P. Specifics of medical data mining for diagnosis aid: A survey. Expert Systems with Applications. 2019;118:300-14.
58. Jaiswal S, Jaiswal T. Machine Learning-Based Classification Models for Diagnosis of Diabetes. Recent Advances in Computer Science and Communications. 2022;15(6):813-21.
59. Jamil D, Palaniappan S, Lokman A, Jamil D, Naseem M, Zia SS. Diagnosis of Gastric Cancer Using Machine Learning Techniques in Healthcare Sector: A Survey. Informatica (Slovenia). 2021;45(7):147-66.

60. Jemioło P, Storman D, Orzechowski P. Artificial Intelligence for COVID-19 Detection in Medical Imaging—Diagnostic Measures and Wasting—A Systematic Umbrella Review. Journal of clinical medicine. 2022;11(7).
61. Jobson D, Mar V, Freckelton I. Legal and ethical considerations of artificial intelligence in skin cancer diagnosis. Australasian Journal of Dermatology. 2022;63(1):e1-e5.
62. Jones OT, Calanzani N, Saji S, Duffy SW, Emery J, Hamilton W, et al. Artificial intelligence techniques that may be applied to primary care data to facilitate earlier diagnosis of cancer: Systematic review. Journal of medical Internet research. 2021;23(3).
63. Kailin J, Xiaotao J, Jinglin P, Yi W, Yuanchen H, Senhui W, et al. Current Evidence and Future Perspective of Accuracy of Artificial Intelligence Application for Early Gastric Cancer Diagnosis With Endoscopy: A Systematic and Meta-Analysis. Frontiers in medicine. 2021;8.
64. Kartasalo K, Bulten W, Delahunt B, Chen PHC, Pinckaers H, Olsson H, et al. Artificial Intelligence for Diagnosis and Gleason Grading of Prostate Cancer in Biopsies—Current Status and Next Steps. European Urology Focus. 2021;7(4):687-91.
65. Kawamoto A, Takenaka K, Okamoto R, Watanabe M, Ohtsuka K. Systematic review of artificial intelligence-based image diagnosis for inflammatory bowel disease. Digestive Endoscopy. 2022.
66. Kourou K, Exarchos KP, Papaloukas C, Sakaloglou P, Exarchos T, Fotiadis DI. Applied machine learning in cancer research: A systematic review for patient diagnosis, classification and prognosis. Computational and structural biotechnology journal. 2021;19:5546-55.
67. Kugunavar S, Prabhakar CJ. Convolutional neural networks for the diagnosis and prognosis of the coronavirus disease pandemic. Visual computing for industry, biomedicine, and art. 2021;4(1).
68. Kumar Y, Gupta S, Singla R, Hu YC. A Systematic Review of Artificial Intelligence Techniques in Cancer Prediction and Diagnosis. Archives of Computational Methods in Engineering. 2022;29(4):2043-70.
69. Latif J, Xiao C, Tu S, Rehman SU, Imran A, Bilal A. Implementation and Use of Disease Diagnosis Systems for Electronic Medical Records Based on Machine Learning: A Complete Review. IEEE Access. 2020;8:150489-513.
70. Lazli L, Boukadoum M, Mohamed OA. A survey on computer-aided diagnosis of brain disorders through MRI based on machine learning and data mining methodologies with an emphasis on Alzheimer disease diagnosis and the contribution of the multimodal fusion. Applied Sciences (Switzerland). 2020;10(5).
71. Lekha S, Suchetha M. Recent Advancements and Future Prospects on E-Nose Sensors Technology and Machine Learning Approaches for Non-Invasive Diabetes Diagnosis: A Review. IEEE Reviews in Biomedical Engineering. 2021;14:127-38.
72. Li LS, Guo XY, Sun K. Recent advances in blood-based and artificial intelligence-enhanced approaches for gastrointestinal cancer diagnosis. World journal of gastroenterology. 2021;27(34):5666-81.
73. Li Y, Chen D, Wu X, Yang W, Chen Y. A narrative review of artificial intelligence-assisted histopathologic diagnosis and decision-making for non-small cell lung cancer: achievements and limitations. Journal of thoracic disease. 2021;13(12):7006-20.
74. Liu X, Chen K, Wu T, Weidman D, Lure F, Li J. Use of multimodality imaging and artificial intelligence for diagnosis and prognosis of early stages of Alzheimer's disease. Translational Research. 2018;194:56-67.
75. Lu H, Yao Y, Wang L, Yan J, Tu S, Xie Y, et al. Research Progress of Machine Learning and Deep Learning in Intelligent Diagnosis of the Coronary Atherosclerotic Heart Disease. Computational and mathematical methods in medicine. 2022;2022.
76. Luo D, Kuang F, Du J, Zhou M, Liu X, Luo X, et al. Artificial Intelligence–Assisted Endoscopic Diagnosis of Early Upper Gastrointestinal Cancer: A Systematic Review and Meta-Analysis. Frontiers in oncology. 2022;12.
77. Majumder A, Sen D. Artificial intelligence in cancer diagnostics and therapy: Current perspectives. Indian Journal of Cancer. 2021;58(4):481-92.

78. Manimaran A, Chandrasekaran VM, Praba B. A review of fuzzy environmental study in medical diagnosis system. Research Journal of Pharmacy and Technology. 2016;9(2):177-84.
79. Massad E, Ortega NRS, de Barros LC, Struchiner CJ. ...and Beyond: Fuzzy logic in medical diagnosis. Studies in Fuzziness and Soft Computing2008. p. 277-310+3-33.
80. Mei J, Desrosiers C, Frasnelli J. Machine Learning for the Diagnosis of Parkinson's Disease: A Review of Literature. Frontiers in aging neuroscience. 2021;13.
81. Miller RJH, Huang C, Liang JX, Slomka PJ. Artificial intelligence for disease diagnosis and risk prediction in nuclear cardiology. Journal of Nuclear Cardiology. 2022.
82. Mirbabaie M, Stieglitz S, Frick NRJ. Artificial intelligence in disease diagnostics: A critical review and classification on the current state of research guiding future direction. Health and technology. 2021;11(4):693-731.
83. Mirzaei G, Adeli H. Machine learning techniques for diagnosis of alzheimer disease, mild cognitive disorder, and other types of dementia. Biomedical Signal Processing and Control. 2022;72.
84. Mitsala A, Tsalikidis C, Pitiakoudis M, Simopoulos C, Tsaroucha AK. Artificial intelligence in colorectal cancer screening, diagnosis and treatment. A new era. Current Oncology. 2021;28(3):1581-607.
85. Moezzi M, Shirbandi K, Shahvandi HK, Arjmand B, Rahim F. The diagnostic accuracy of Artificial Intelligence-Assisted CT imaging in COVID-19 disease: A systematic review and meta-analysis. Informatics in Medicine Unlocked. 2021;24.
86. Muro S, Ishida M, Horie Y, Takeuchi W, Nakagawa S, Ban H, et al. Machine learning methods for the diagnosis of chronic obstructive pulmonary disease in healthy subjects: Retrospective observational cohort study. JMIR medical informatics. 2021;9(7).
87. Muthumeenakshi M. An application of pentagonal valued hesitant fuzzy set in medical diagnosis. Research Journal of Pharmacy and Technology. 2016;9(10):1823-6.
88. Myszczynska MA, Ojamies PN, Lacoste AMB, Neil D, Saffari A, Mead R, et al. Applications of machine learning to diagnosis and treatment of neurodegenerative diseases. Nature Reviews Neurology. 2020;16(8):440-56.
89. Naik B, Mehta A, Shah M. Denouements of machine learning and multimodal diagnostic classification of Alzheimer's disease. Visual computing for industry, biomedicine, and art. 2020;3(1).
90. Nakata N. Recent technical development of artificial intelligence for diagnostic medical imaging. Japanese Journal of Radiology. 2019.
91. Nam D, Chapiro J, Paradis V, Seraphin TP, Kather JN. Artificial intelligence in liver diseases: Improving diagnostics, prognostics and response prediction. JHEP Reports. 2022;4(4).
92. Nindrea RD, Aryandono T, Lazuardi L, Dwiprahasto I. Diagnostic accuracy of different machine learning algorithms for breast cancer risk calculation: A meta-analysis. Asian Pacific Journal of Cancer Prevention. 2018;19(7):1747-52.
93. Oza P, Sharma P, Patel S, Kumar P. Deep convolutional neural networks for computer-aided breast cancer diagnostic: a survey. Neural Computing and Applications. 2022;34(3):1815-36.
94. Painuli D, Bhardwaj S, köse U. Recent advancement in cancer diagnosis using machine learning and deep learning techniques: A comprehensive review. Computers in Biology and Medicine. 2022;146.
95. Palumbo B, Bianconi F, Nuvoli S, Spanu A, Fravolini ML. Artificial intelligence techniques support nuclear medicine modalities to improve the diagnosis of Parkinson's disease and Parkinsonian syndromes. Clinical and Translational Imaging. 2021;9(1):19-35.
96. Pandey I, Misra V, Pandey AT, Ramteke PW, Agrawal R. Artificial intelligence technologies empowering identification of novel diagnostic molecular markers in gastric cancer. Indian Journal of Pathology and Microbiology. 2021;64(5):S63-S8.
97. Park SH, Han K. Methodologic guide for evaluating clinical performance and effect of artificial intelligence technology for medical diagnosis and prediction. Radiology. 2018;286(3):800-9.
98. Pathmavathi VR, Selvakumari K. Solving medical diagnostic problem in intuitionistic fuzzy sets using new distance measure. International Journal of Pharmaceutical Research. 2019;11(1):645-8.
99. Patil S, Albogami S, Hosmani J, Mujoo S, Kamil MA, Mansour MA, et al. Artificial Intelligence in the Diagnosis of Oral Diseases: Applications and Pitfalls. Diagnostics. 2022;12(5).

100. Pecere S, Milluzzo SM, Esposito G, Dilaghi E, Telese A, Eusebi LH. Applications of artificial intelligence for the diagnosis of gastrointestinal diseases. Diagnostics. 2021;11(9).
101. Porter CR, Crawford ED. Combining artificial neural networks and transrectal ultrasound in the diagnosis of prostate cancer. Oncology. 2003;17(10):1395-9.
102. Prabhakar B, Singh RK, Yadav KS. Artificial intelligence (AI) impacting diagnosis of glaucoma and understanding the regulatory aspects of AI-based software as medical device. Computerized Medical Imaging and Graphics. 2021;87.
103. Ralbovsky NM, Lednev IK. Towards development of a novel universal medical diagnostic method: Raman spectroscopy and machine learning. Chemical Society Reviews. 2020;49(20):7428-53.
104. Ramesh P, Karuppasamy R, Veerappapillai S. A review on recent advancements in diagnosis and classification of cancers using artificial intelligence. BioMedicine (Taiwan). 2020;10(3).
105. Rompianesi G, Pegoraro F, Ivan Troisi R, Ceresa CDL, Montalti R. Artificial intelligence in the diagnosis and management of colorectal cancer liver metastases. World journal of gastroenterology. 2022;28(1):108-22.
106. Roy Chowdhury S, Roy A, Saha H. ASIC design of a digital fuzzy system on chip for medical diagnostic applications. Journal of medical systems. 2011;35(2):221-35.
107. Sadoughi F, Kazemy Z, Hamedan F, Owji L, Rahmanikatigari M, Azadboni TT. Artificial intelligence methods for the diagnosis of breast cancer by image processing: A review. Breast Cancer: Targets and Therapy. 2018;10:219-30.
108. Sajana T, Narasingarao MR. Machine learning techniques for malaria disease diagnosis - A review. Journal of Advanced Research in Dynamical and Control Systems. 2017;9(Special Issue 6):349-69.
109. Sajda P. Machine learning for detection and diagnosis of disease. Annual review of biomedical engineering2006. p. 537-65.
110. Saravanan S, Ramkumar K, Adalarasu K, Sivanandam V, Kumar SR, Stalin S, et al. A Systematic Review of Artificial Intelligence (AI) Based Approaches for the Diagnosis of Parkinson's Disease. Archives of Computational Methods in Engineering. 2022.
111. Sattlecker M, Stone N, Bessant C. Current trends in machine-learning methods applied to spectroscopic cancer diagnosis. TrAC - Trends in Analytical Chemistry. 2014;59:17-25.
112. Saxena S, Gyanchandani M. Machine Learning Methods for Computer-Aided Breast Cancer Diagnosis Using Histopathology: A Narrative Review. Journal of Medical Imaging and Radiation Sciences. 2020;51(1):182-93.
113. Scott J, Scott R. Artificial intelligence: Its use in medical diagnosis. Journal of Nuclear Medicine. 1993;34(3):510-4.
114. Shen J, Zhang CJP, Jiang B, Chen J, Song J, Liu Z, et al. Artificial intelligence versus clinicians in disease diagnosis: Systematic review. JMIR medical informatics. 2019;7(3).
115. Shu S, Ren J, Song J. Clinical application of machine learning-based artificial intelligence in the diagnosis, prediction, and classification of cardiovascular diseases. Circulation Journal. 2021;85(9):1416-25.
116. Smith KP, Kirby JE. Image analysis and artificial intelligence in infectious disease diagnostics. Clinical Microbiology and Infection. 2020;26(10):1318-23.
117. Stankovic B, Kotur N, Nikcevic G, Gasic V, Zukic B, Pavlovic S. Machine learning modeling from omics data as prospective tool for improvement of inflammatory bowel disease diagnosis and clinical classifications. Genes. 2021;12(9).
118. Suarez-Ibarrola R, Sigle A, Eklund M, Eberli D, Miernik A, Benndorf M, et al. Artificial Intelligence in Magnetic Resonance Imaging–based Prostate Cancer Diagnosis: Where Do We Stand in 2021? European Urology Focus. 2022;8(2):409-17.
119. Sun YL, Zhang DL. Machine learning techniques for screening and diagnosis of diabetes: A survey. Tehnicki Vjesnik. 2019;26(3):872-80.
120. Syer T, Mehta P, Antonelli M, Mallett S, Atkinson D, Ourselin S, et al. Artificial intelligence compared to radiologists for the initial diagnosis of prostate cancer on magnetic resonance imaging: A systematic review and recommendations for future studies. Cancers. 2021;13(13).

121. Szolovits P, Patil RS, Schwartz WB. Artificial intelligence in medical diagnosis. Annals of Internal Medicine. 1988;108(1):80-7.
122. Tahvildari M, Singh RB, Saeed HN. Application of Artificial Intelligence in the Diagnosis and Management of Corneal Diseases. Seminars in Ophthalmology. 2021;36(8):641-8.
123. Tan J, Qin F, Yuan J. Current applications of artificial intelligence combined with urine detection in disease diagnosis and treatment. Translational Andrology and Urology. 2021;10(4).
124. Tan TE, Chan HW, Singh M, Wong TY, Pulido JS, Michaelides M, et al. Artificial intelligence for diagnosis of inherited retinal disease: An exciting opportunity and one step forward. British Journal of Ophthalmology. 2021.
125. Tangri N, Ferguson TW. Role of artificial intelligence in the diagnosis and management of kidney disease: applications to chronic kidney disease and acute kidney injury. Current Opinion in Nephrology and Hypertension. 2022;31(3):283-7.
126. Telecan T, Andras I, Crisan N, Giurgiu L, Cătа ED, Caraiani C, et al. More than Meets the Eye: Using Textural Analysis and Artificial Intelligence as Decision Support Tools in Prostate Cancer Diagnosis—A Systematic Review. Journal of personalized medicine. 2022;12(6).
127. Tomassini S, Falcionelli N, Sernani P, Burattini L, Dragoni AF. Lung nodule diagnosis and cancer histology classification from computed tomography data by convolutional neural networks: A survey. Computers in Biology and Medicine. 2022;146.
128. Tran WT, Sadeghi-Naini A, Lu FI, Gandhi S, Meti N, Brackstone M, et al. Computational Radiology in Breast Cancer Screening and Diagnosis Using Artificial Intelligence. Canadian Association of Radiologists Journal. 2021;72(1):98-108.
129. Turkoglu I, Arslan A, Ilkay E. An intelligent system for diagnosis of the heart valve diseases with wavelet packet neural networks. Computers in Biology and Medicine. 2003;33(4):319-31.
130. Visaggi P, Barberio B, Ghisa M, Ribolsi M, Savarino V, Fassan M, et al. Modern diagnosis of early esophageal cancer: From blood biomarkers to advanced endoscopy and artificial intelligence. Cancers. 2021;13(13).
131. Visaggi P, Barberio B, Gregori D, Azzolina D, Martinato M, Hassan C, et al. Systematic review with meta-analysis: artificial intelligence in the diagnosis of oesophageal diseases. Alimentary Pharmacology and Therapeutics. 2022;55(5):528-40.
132. Visaggi P, De Bortoli N, Barberio B, Savarino V, Oleas R, Rosi EM, et al. Artificial intelligence in the diagnosis of upper gastrointestinal diseases. Journal of Clinical Gastroenterology. 2022;56(1):23-35.
133. Wani SUD, Khan NA, Thakur G, Gautam SP, Ali M, Alam P, et al. Utilization of Artificial Intelligence in Disease Prevention: Diagnosis, Treatment, and Implications for the Healthcare Workforce. Healthcare (Switzerland). 2022;10(4).
134. Watanabe K, Aoki Y, Matsumoto M. An application of artificial intelligence to diagnostic imaging of spine disease: Estimating spinal alignment from moiré images. Neurospine. 2019;16(4):697-702.
135. Wei W, Yang X. Comparison of Diagnosis Accuracy between a Backpropagation Artificial Neural Network Model and Linear Regression in Digestive Disease Patients: An Empirical Research. Computational and mathematical methods in medicine. 2021;2021.
136. Wiharto W, Kusnanto H, Herianto H. System diagnosis of coronary heart disease using a combination of dimensional reduction and data mining techniques: A review. Indonesian Journal of Electrical Engineering and Computer Science. 2017;7(2):514-23.
137. Wirries A, Geiger F, Oberkircher L, Jabari S. An Evolution Gaining Momentum—The Growing Role of Artificial Intelligence in the Diagnosis and Treatment of Spinal Diseases. Diagnostics. 2022;12(4).
138. Xiao Z, Ji D, Li F, Li Z, Bao Z. Application of Artificial Intelligence in Early Gastric Cancer Diagnosis. Digestion. 2022;103(1):69-75.
139. Xu J, Zhang M. Use of Magnetic Resonance Imaging and Artificial Intelligence in Studies of Diagnosis of Parkinson's Disease. ACS Chemical Neuroscience. 2019;10(6):2658-67.
140. Yadav AK, Verma D, Kumar A, Kumar P, Solanki PR. The perspectives of biomarker-based electrochemical immunosensors, artificial intelligence and the Internet of Medical Things toward COVID-19 diagnosis and management. Materials Today Chemistry. 2021;20.

141. Yang Y, Jin G, Pang Y, Wang W, Zhang H, Tuo G, et al. The diagnostic accuracy of artificial intelligence in thoracic diseases: A protocol for systematic review and meta-analysis. Medicine (United States). 2020;99(7).
142. Yassin NIR, Omran S, El Houby EMF, Allam H. Machine learning techniques for breast cancer computer aided diagnosis using different image modalities: A systematic review. Computer methods and programs in biomedicine. 2018;156:25-45.
143. Yoon HJ, Kim JH. Lesion-based convolutional neural network in diagnosis of early gastric cancer. Clinical Endoscopy. 2020;53(2):127-31.
144. Yue W, Wang Z, Chen H, Payne A, Liu X. Machine learning with applications in breast cancer diagnosis and prognosis. Designs. 2018;2(2):1-17.
145. Zhang J. Mining imaging and clinical data with machine learning approaches for the diagnosis and early detection of Parkinson's disease. npj Parkinson's Disease. 2022;8(1).
146. Zhang J, Li L, Zhe X, Tang M, Zhang X, Lei X, et al. The Diagnostic Performance of Machine Learning-Based Radiomics of DCE-MRI in Predicting Axillary Lymph Node Metastasis in Breast Cancer: A Meta-Analysis. Frontiers in oncology. 2022;12.
147. Zhang R, Tie X, Qi Z, Bevins NB, Zhang C, Griner D, et al. Diagnosis of Coronavirus Disease 2019 Pneumonia by Using Chest Radiography: Value of Artificial Intelligence. Radiology. 2021;298(2):E88-E97.
148. Zhang Y, Liang S, Feng Y, Wang Q, Sun F, Chen S, et al. Automation of literature screening using machine learning in medical evidence synthesis: a diagnostic test accuracy systematic review protocol. Systematic Reviews. 2022;11(1).
149. Zhou J, Cao W, Wang L, Pan Z, Fu Y. Application of artificial intelligence in the diagnosis and prognostic prediction of ovarian cancer. Computers in Biology and Medicine. 2022;146.
150. Zhou J, Du M, Chang S, Chen Z. Artificial intelligence in echocardiography: detection, functional evaluation, and disease diagnosis. Cardiovascular Ultrasound. 2021;19(1).
151. Zou L, Yu S, Meng T, Zhang Z, Liang X, Xie Y. A Technical Review of Convolutional Neural Network-Based Mammographic Breast Cancer Diagnosis. Computational and mathematical methods in medicine. 2019;2019.
152. Alqaissi EY, Alotaibi FS, Ramzan MS. Modern Machine-Learning Predictive Models for Diagnosing Infectious Diseases. Computational and mathematical methods in medicine. 2022;2022.
153. Burt JR, Torosdagli N, Khosravan N, Raviprakash H, Mortazi A, Tissavirasingham F, et al. Deep learning beyond cats and dogs: Recent advances in diagnosing breast cancer with deep neural networks. British Journal of Radiology. 2018;91(1089).
154. Landers M, Saria S, Espay AJ. Will Artificial Intelligence Replace the Movement Disorders Specialist for Diagnosing and Managing Parkinson's Disease? Journal of Parkinson's disease. 2021;11(s1):S117-S22.
155. Liu Q, Qu M, Sun L, Wang H. Accuracy of ultrasonic artificial intelligence in diagnosing benign and malignant breast diseases A protocol for systematic review and meta-analysis. Medicine (United States). 2021;100(50):E28289.
156. Revilla-León M, Gómez-Polo M, Barmak AB, Inam W, Kan JYK, Kois JC, et al. Artificial intelligence models for diagnosing gingivitis and periodontal disease: A systematic review. Journal of Prosthetic Dentistry. 2022.
157. Reyana A, Kautish S. Coronavirus-related Disease Pandemic: A Review on Machine Learning Approaches and Treatment Trials on Diagnosed Population for Future Clinical Decision Support. Current medical imaging. 2022;18(2):104-12.
158. Abd-Alrazaq A, Alhuwail D, Schneider J, Toro CT, Ahmed A, Alzubaidi M, et al. The performance of artificial intelligence-driven technologies in diagnosing mental disorders: an umbrella review. NPJ digital medicine. 2022;5(1):87.
159. Abedi V, Khan A, Chaudhary D, Misra D, Avula V, Mathrawala D, et al. Using artificial intelligence for improving stroke diagnosis in emergency departments: a practical framework. Therapeutic advances in neurological disorders. 2020;13:1756286420938962.

160. Ahmad OF, Soares AS, Mazomenos E, Brandao P, Vega R, Seward E, et al. Artificial intelligence and computer-aided diagnosis in colonoscopy: current evidence and future directions. The lancet Gastroenterology & hepatology. 2019;4(1):71-80.
161. Ahmed MR, Zhang Y, Feng Z, Lo B, Inan OT, Liao H. Neuroimaging and Machine Learning for Dementia Diagnosis: Recent Advancements and Future Prospects. IEEE Rev Biomed Eng. 2019;12:19-33.
162. Alballa N, Al-Turaiki I. Machine learning approaches in COVID-19 diagnosis, mortality, and severity risk prediction: A review. Inform Med Unlocked. 2021;24:100564.
163. Allegra A, Tonacci A, Sciaccotta R, Genovese S, Musolino C, Pioggia G, et al. Machine Learning and Deep Learning Applications in Multiple Myeloma Diagnosis, Prognosis, and Treatment Selection. Cancers. 2022;14(3).
164. Alqaysi ME, Albahri AS, Hamid RA. Diagnosis-Based Hybridization of Multimedical Tests and Sociodemographic Characteristics of Autism Spectrum Disorder Using Artificial Intelligence and Machine Learning Techniques: A Systematic Review. International journal of telemedicine and applications. 2022;2022:3551528.
165. Alsharif MH, Alsharif YH, Chaudhry SA, Albreem MA, Jahid A, Hwang E. Artificial intelligence technology for diagnosing COVID-19 cases: a review of substantial issues. European review for medical and pharmacological sciences. 2020;24(17):9226-33.
166. Ao C, Jin S, Ding H, Zou Q, Yu L. Application and Development of Artificial Intelligence and Intelligent Disease Diagnosis. Current pharmaceutical design. 2020;26(26):3069-75.
167. Aractingi S, Pellacani G. Computational neural network in melanocytic lesions diagnosis: artificial intelligence to improve diagnosis in dermatology? European journal of dermatology : EJD. 2019;29(S1):4-7.
168. Arima A, Tsutsui M, Washio T, Baba Y, Kawai T. Solid-State Nanopore Platform Integrated with Machine Learning for Digital Diagnosis of Virus Infection. Analytical chemistry. 2021;93(1):215-27.
169. Arora G, Joshi J, Mandal RS, Shrivastava N, Virmani R, Sethi T. Artificial Intelligence in Surveillance, Diagnosis, Drug Discovery and Vaccine Development against COVID-19. Pathogens (Basel, Switzerland). 2021;10(8).
170. Aruleba RT, Adekiya TA, Ayawei N, Obaido G, Aruleba K, Mienye ID, et al. COVID-19 Diagnosis: A Review of Rapid Antigen, RT-PCR and Artificial Intelligence Methods. Bioengineering (Basel, Switzerland). 2022;9(4).
171. Asada K, Komatsu M, Shimoyama R, Takasawa K, Shinkai N, Sakai A, et al. Application of Artificial Intelligence in COVID-19 Diagnosis and Therapeutics. Journal of personalized medicine. 2021;11(9).
172. Asiri AF, Altuwalah AS. The role of neural artificial intelligence for diagnosis and treatment planning in endodontics: A qualitative review. The Saudi dental journal. 2022;34(4):270-81.
173. Ataeinia B, Heidari P. Artificial Intelligence and the Future of Diagnostic and Therapeutic Radiopharmaceutical Development:: In Silico Smart Molecular Design. PET clinics. 2021;16(4):513-23.
174. Bedrikovetski S, Dudi-Venkata NN, Maicas G, Kroon HM, Seow W, Carneiro G, et al. Artificial intelligence for the diagnosis of lymph node metastases in patients with abdominopelvic malignancy: A systematic review and meta-analysis. Artif Intell Med. 2021;113:102022.
175. Bera K, Schalper KA, Rimm DL, Velcheti V, Madabhushi A. Artificial intelligence in digital pathology - new tools for diagnosis and precision oncology. Nature reviews Clinical oncology. 2019;16(11):703-15.
176. Bhadra S, Kumar CJ. An insight into diagnosis of depression using machine learning techniques: a systematic review. Current medical research and opinion. 2022;38(5):749-71.
177. Bourcier S, Klug J, Nguyen LS. Non-occlusive mesenteric ischemia: Diagnostic challenges and perspectives in the era of artificial intelligence. World journal of gastroenterology. 2021;27(26):4088-103.
178. Brennan HL, Kirby SD. Barriers of artificial intelligence implementation in the diagnosis of obstructive sleep apnea. Journal of otolaryngology - head & neck surgery = Le Journal d'oto-rhino-laryngologie et de chirurgie cervico-faciale. 2022;51(1):16.

179. Cai S, Han IC, Scott AW. Artificial intelligence for improving sickle cell retinopathy diagnosis and management. Eye (London, England). 2021;35(10):2675-84.
180. Campbell CG, Ting DSW, Keane PA, Foster PJ. The potential application of artificial intelligence for diagnosis and management of glaucoma in adults. British medical bulletin. 2020;134(1):21-33.
181. Cao Z, Chen F, Grais EM, Yue F, Cai Y, Swanepoel W, et al. Machine Learning in Diagnosing Middle Ear Disorders Using Tympanic Membrane Images: A Meta-Analysis. The Laryngoscope. 2022.
182. Carobene A, Milella F, Famiglini L, Cabitza F. How is test laboratory data used and characterised by machine learning models? A systematic review of diagnostic and prognostic models developed for COVID-19 patients using only laboratory data. Clinical chemistry and laboratory medicine. 2022.
183. Cau R, Cherchi V, Micheletti G, Porcu M, Mannelli L, Bassareo P, et al. Potential Role of Artificial Intelligence in Cardiac Magnetic Resonance Imaging: Can It Help Clinicians in Making a Diagnosis? Journal of thoracic imaging. 2021;36(3):142-8.
184. Chaddad A, Li J, Lu Q, Li Y, Okuwobi IP, Tanougast C, et al. Can Autism Be Diagnosed with Artificial Intelligence? A Narrative Review. Diagnostics (Basel, Switzerland). 2021;11(11).
185. Chakroborty S, Gupta M, Devishamani CS, Patel K, Ankit C, Ganesh Babu TC, et al. Narrative review of artificial intelligence in diabetic macular edema: Diagnosis and predicting treatment response using optical coherence tomography. Indian journal of ophthalmology. 2021;69(11):2999-3008.
186. Cleophas TJ, Cleophas TF. Artificial intelligence for diagnostic purposes: principles, procedures and limitations. Clinical chemistry and laboratory medicine. 2010;48(2):159-65.
187. Comito C, Pizzuti C. Artificial intelligence for forecasting and diagnosing COVID-19 pandemic: A focused review. Artif Intell Med. 2022;128:102286.
188. Correia FP, Lourenço LC. Artificial intelligence application in diagnostic gastrointestinal endoscopy - Deus ex machina? World journal of gastroenterology. 2021;27(32):5351-61.
189. Dande P, Samant P. Acquaintance to Artificial Neural Networks and use of artificial intelligence as a diagnostic tool for tuberculosis: A review. Tuberculosis (Edinburgh, Scotland). 2018;108:1-9.
190. D'Antoni F, Russo F, Ambrosio L, Bacco L, Vollero L, Vadalà G, et al. Artificial Intelligence and Computer Aided Diagnosis in Chronic Low Back Pain: A Systematic Review. International journal of environmental research and public health. 2022;19(10).
191. Das S, Sil J. Managing Boundary Uncertainty in Diagnosing the Patients of Rural Area Using Fuzzy and Rough Set. Journal of healthcare informatics research. 2022;6(1):1-47.
192. Dastjerd NK, Sert OC, Ozyer T, Alhajj R. Fuzzy Classification Methods Based Diagnosis of Parkinson's disease from Speech Test Cases. Current aging science. 2019;12(2):100-20.
193. de Filippis R, Carbone EA, Gaetano R, Bruni A, Pugliese V, Segura-Garcia C, et al. Machine learning techniques in a structural and functional MRI diagnostic approach in schizophrenia: a systematic review. Neuropsychiatric disease and treatment. 2019;15:1605-27.
194. Devnath L, Summons P, Luo S, Wang D, Shaukat K, Hameed IA, et al. Computer-Aided Diagnosis of Coal Workers' Pneumoconiosis in Chest X-ray Radiographs Using Machine Learning: A Systematic Literature Review. International journal of environmental research and public health. 2022;19(11).
195. Dilaghi E, Lahner E, Annibale B, Esposito G. Systematic review and meta-analysis: Artificial intelligence for the diagnosis of gastric precancerous lesions and Helicobacter pylori infection. Digestive and liver disease : official journal of the Italian Society of Gastroenterology and the Italian Association for the Study of the Liver. 2022.
196. Dilsizian SE, Siegel EL. Artificial intelligence in medicine and cardiac imaging: harnessing big data and advanced computing to provide personalized medical diagnosis and treatment. Current cardiology reports. 2014;16(1):441.
197. Dinani AM, Kowdley KV, Noureddin M. Application of Artificial Intelligence for Diagnosis and Risk Stratification in NAFLD and NASH: The State of the Art. Hepatology (Baltimore, Md). 2021;74(4):2233-40.
198. Domínguez Hernández KR, Aguilar Lasserre AA, Posada Gómez R, Palet Guzmán JA, González Sánchez BE. Development of an expert system as a diagnostic support of cervical cancer in atypical

glandular cells, based on fuzzy logics and image interpretation. Computational and mathematical methods in medicine. 2013;2013:796387.
199. Dong J, Wu H, Zhou D, Li K, Zhang Y, Ji H, et al. Application of Big Data and Artificial Intelligence in COVID-19 Prevention, Diagnosis, Treatment and Management Decisions in China. Journal of medical systems. 2021;45(9):84.
200. Dov D, Assaad S, Syedibrahim A, Bell J, Huang J, Madden J, et al. A Hybrid Human-Machine Learning Approach for Screening Prostate Biopsies Can Improve Clinical Efficiency Without Compromising Diagnostic Accuracy. Archives of pathology & laboratory medicine. 2022;146(6):727-34.
201. Du R, Ohno-Matsui K. Novel Uses and Challenges of Artificial Intelligence in Diagnosing and Managing Eyes with High Myopia and Pathologic Myopia. Diagnostics (Basel, Switzerland). 2022;12(5).
202. Edavally S, Miller DD, Youssef NA. Artificial intelligence to aid detection and diagnostic accuracy of mood disorders and predict suicide risk: A systematic review. Annals of clinical psychiatry : official journal of the American Academy of Clinical Psychiatrists. 2021;33(4):270-81.
203. El-Kareh R, Sittig DF. Enhancing Diagnosis Through Technology: Decision Support, Artificial Intelligence, and Beyond. Critical care clinics. 2022;38(1):129-39.
204. Eslami T, Almuqhim F, Raiker JS, Saeed F. Machine Learning Methods for Diagnosing Autism Spectrum Disorder and Attention- Deficit/Hyperactivity Disorder Using Functional and Structural MRI: A Survey. Frontiers in neuroinformatics. 2020;14:575999.
205. Feng C, Shao Y, Wang B, Qu Y, Wang Q, Li Y, et al. Development and Application of Artificial Intelligence in Auxiliary TCM Diagnosis. Evidence-based complementary and alternative medicine : eCAM. 2021;2021:6656053.
206. Fleuren LM, Klausch TLT, Zwager CL, Schoonmade LJ, Guo T, Roggeveen LF, et al. Machine learning for the prediction of sepsis: a systematic review and meta-analysis of diagnostic test accuracy. Intensive care medicine. 2020;46(3):383-400.
207. Fritz B, Fritz J. Artificial intelligence for MRI diagnosis of joints: a scoping review of the current state-of-the-art of deep learning-based approaches. Skeletal radiology. 2022;51(2):315-29.
208. Fusco R, Grassi R, Granata V, Setola SV, Grassi F, Cozzi D, et al. Artificial Intelligence and COVID-19 Using Chest CT Scan and Chest X-ray Images: Machine Learning and Deep Learning Approaches for Diagnosis and Treatment. Journal of personalized medicine. 2021;11(10).
209. Gandi C, Vaccarella L, Bientinesi R, Racioppi M, Pierconti F, Sacco E. Bladder cancer in the time of machine learning: Intelligent tools for diagnosis and management. Urologia. 2021;88(2):94-102.
210. Gao Y, Geras KJ, Lewin AA, Moy L. New Frontiers: An Update on Computer-Aided Diagnosis for Breast Imaging in the Age of Artificial Intelligence. AJR American journal of roentgenology. 2019;212(2):300-7.
211. Gao F, Zhu Y, Zhang J. Artificial intelligence in computer-aided diagnosis of abdomen diseases. Science China Life sciences. 2019;62(10):1396-9.
212. Gazda J, Drotar P, Drazilova S, Gazda J, Gazda M, Janicko M, et al. Artificial Intelligence and Its Application to Minimal Hepatic Encephalopathy Diagnosis. Journal of personalized medicine. 2021;11(11).
213. Ghosh D, Chakraborty S, Kodamana H, Chakraborty S. Application of machine learning in understanding plant virus pathogenesis: trends and perspectives on emergence, diagnosis, host-virus interplay and management. Virology journal. 2022;19(1):42.
214. Giulietti M, Cecati M, Sabanovic B, Scirè A, Cimadamore A, Santoni M, et al. The Role of Artificial Intelligence in the Diagnosis and Prognosis of Renal Cell Tumors. Diagnostics (Basel, Switzerland). 2021;11(2).
215. Goncalves S, Fong PC, Blokhina M. Artificial intelligence for early diagnosis of lung cancer through incidental nodule detection in low- and middle-income countries-acceleration during the COVID-19 pandemic but here to stay. American journal of cancer research. 2022;12(1):1-16.
216. Goyal H, Sherazi SAA, Gupta S, Perisetti A, Achebe I, Ali A, et al. Application of artificial intelligence in diagnosis of pancreatic malignancies by endoscopic ultrasound: a systemic review. Therapeutic advances in gastroenterology. 2022;15:17562848221093873.

217. Goździkiewicz N, Zwolińska D, Polak-Jonkisz D. The Use of Artificial Intelligence Algorithms in the Diagnosis of Urinary Tract Infections-A Literature Review. Journal of clinical medicine. 2022;11(10).
218. Greer BT, Khan J. Diagnostic classification of cancer using DNA microarrays and artificial intelligence. Annals of the New York Academy of Sciences. 2004;1020:49-66.
219. Han H, Jiang X. Overcome support vector machine diagnosis overfitting. Cancer informatics. 2014;13(Suppl 1):145-58.
220. Hardy M, Harvey H. Artificial intelligence in diagnostic imaging: impact on the radiography profession. The British journal of radiology. 2020;93(1108):20190840.
221. Hayward MK, Weaver VM. Improving DCIS diagnosis and predictive outcome by applying artificial intelligence. Biochimica et biophysica acta Reviews on cancer. 2021;1876(1):188555.
222. He F, Wang Y, Xiu Y, Zhang Y, Chen L. Artificial Intelligence in Prenatal Ultrasound Diagnosis. Frontiers in medicine. 2021;8:729978.
223. Helgason CM, Jobe TH. Fuzzy logic and causal reasoning with an 'n' of 1 for diagnosis and treatment of the stroke patient. Expert review of neurotherapeutics. 2004;4(2):249-54.
224. Helman SM, Herrup EA, Christopher AB, Al-Zaiti SS. The role of machine learning applications in diagnosing and assessing critical and non-critical CHD: a scoping review. Cardiology in the young. 2021;31(11):1770-80.
225. Huang Q, Zhang F, Li X. Machine Learning in Ultrasound Computer-Aided Diagnostic Systems: A Survey. BioMed research international. 2018;2018:5137904.
226. Huang S, Yang J, Fong S, Zhao Q. Artificial intelligence in the diagnosis of COVID-19: challenges and perspectives. International journal of biological sciences. 2021;17(6):1581-7.
227. Hunter B, Hindocha S, Lee RW. The Role of Artificial Intelligence in Early Cancer Diagnosis. Cancers. 2022;14(6).
228. Hussein M, González-Bueno Puyal J, Mountney P, Lovat LB, Haidry R. Role of artificial intelligence in the diagnosis of oesophageal neoplasia: 2020 an endoscopic odyssey. World journal of gastroenterology. 2020;26(38):5784-96.
229. Ittoop SM, Jaccard N, Lanouette G, Kahook MY. The Role of Artificial Intelligence in the Diagnosis and Management of Glaucoma. Journal of glaucoma. 2022;31(3):137-46.
230. Jan Z, Ai-Ansari N, Mousa O, Abd-Alrazaq A, Ahmed A, Alam T, et al. The Role of Machine Learning in Diagnosing Bipolar Disorder: Scoping Review. Journal of medical Internet research. 2021;23(11):e29749.
231. Jiménez Pérez M, Grande RG. Application of artificial intelligence in the diagnosis and treatment of hepatocellular carcinoma: A review. World journal of gastroenterology. 2020;26(37):5617-28.
232. John CC, Ponnusamy V, Krishnan Chandrasekaran S, R N. A Survey on Mathematical, Machine Learning and Deep Learning Models for COVID-19 Transmission and Diagnosis. IEEE Rev Biomed Eng. 2022;15:325-40.
233. Kabade V, Hooda R, Raj C, Awan Z, Young AS, Welgampola MS, et al. Machine Learning Techniques for Differential Diagnosis of Vertigo and Dizziness: A Review. Sensors (Basel, Switzerland). 2021;21(22).
234. Kaplan A, Cao H, FitzGerald JM, Iannotti N, Yang E, Kocks JWH, et al. Artificial Intelligence/Machine Learning in Respiratory Medicine and Potential Role in Asthma and COPD Diagnosis. The journal of allergy and clinical immunology In practice. 2021;9(6):2255-61.
235. Karandikar P, Massaad E, Hadzipasic M, Kiapour A, Joshi RS, Shankar GM, et al. Machine Learning Applications of Surgical Imaging for the Diagnosis and Treatment of Spine Disorders: Current State of the Art. Neurosurgery. 2022;90(4):372-82.
236. Kassem MA, Hosny KM, Damaševičius R, Eltoukhy MM. Machine Learning and Deep Learning Methods for Skin Lesion Classification and Diagnosis: A Systematic Review. Diagnostics (Basel, Switzerland). 2021;11(8).
237. Kayser K, Görtler J, Bogovac M, Bogovac A, Goldmann T, Vollmer E, et al. AI (artificial intelligence) in histopathology--from image analysis to automated diagnosis. Folia histochemica et cytobiologica. 2009;47(3):355-61.

238. Khalsa SSS, Hollon TC, Adapa A, Urias E, Srinivasan S, Jairath N, et al. Automated histologic diagnosis of CNS tumors with machine learning. CNS oncology. 2020;9(2):Cns56.
239. Khanagar SB, Al-Ehaideb A, Vishwanathaiah S, Maganur PC, Patil S, Naik S, et al. Scope and performance of artificial intelligence technology in orthodontic diagnosis, treatment planning, and clinical decision-making - A systematic review. Journal of dental sciences. 2021;16(1):482-92.
240. Khanagar SB, Alfouzan K, Awawdeh M, Alkadi L, Albalawi F, Alfadley A. Application and Performance of Artificial Intelligence Technology in Detection, Diagnosis and Prediction of Dental Caries (DC)-A Systematic Review. Diagnostics (Basel, Switzerland). 2022;12(5).
241. Khanagar SB, Naik S, Al Kheraif AA, Vishwanathaiah S, Maganur PC, Alhazmi Y, et al. Application and Performance of Artificial Intelligence Technology in Oral Cancer Diagnosis and Prediction of Prognosis: A Systematic Review. Diagnostics (Basel, Switzerland). 2021;11(6).
242. Klein C, Zeng Q, Arbaretaz F, Devêvre E, Calderaro J, Lomenie N, et al. Artificial intelligence for solid tumour diagnosis in digital pathology. British journal of pharmacology. 2021;178(21):4291-315.
243. Komura D, Ishikawa S. Machine learning approaches for pathologic diagnosis. Virchows Archiv : an international journal of pathology. 2019;475(2):131-8.
244. Kononenko I. Machine learning for medical diagnosis: history, state of the art and perspective. Artif Intell Med. 2001;23(1):89-109.
245. Kudina O, de Boer B. Co-designing diagnosis: Towards a responsible integration of Machine Learning decision-support systems in medical diagnostics. Journal of evaluation in clinical practice. 2021;27(3):529-36.
246. Kudo SE, Mori Y, Abdel-Aal UM, Misawa M, Itoh H, Oda M, et al. Artificial intelligence and computer-aided diagnosis for colonoscopy: where do we stand now? Translational gastroenterology and hepatology. 2021;6:64.
247. Larson DB, Harvey H, Rubin DL, Irani N, Tse JR, Langlotz CP. Regulatory Frameworks for Development and Evaluation of Artificial Intelligence-Based Diagnostic Imaging Algorithms: Summary and Recommendations. Journal of the American College of Radiology : JACR. 2021;18(3 Pt A):413-24.
248. Lee KS, Ahn KH. Application of Artificial Intelligence in Early Diagnosis of Spontaneous Preterm Labor and Birth. Diagnostics (Basel, Switzerland). 2020;10(9).
249. Lee LS, Chan PK, Wen C, Fung WC, Cheung A, Chan VWK, et al. Artificial intelligence in diagnosis of knee osteoarthritis and prediction of arthroplasty outcomes: a review. Arthroplasty (London, England). 2022;4(1):16.
250. Li X, Kang N, Qi X, Huang Y. Artificial intelligence in the diagnosis of cirrhosis and portal hypertension. Journal of medical ultrasonics (2001). 2021.
251. Li Y, Zhang T, Yang Y, Gao Y. Artificial intelligence-aided decision support in paediatrics clinical diagnosis: development and future prospects. The Journal of international medical research. 2020;48(9):300060520945141.
252. Liang F, Wang S, Zhang K, Liu TJ, Li JN. Development of artificial intelligence technology in diagnosis, treatment, and prognosis of colorectal cancer. World journal of gastrointestinal oncology. 2022;14(1):124-52.
253. Lim SS, Ohn J, Mun JH. Diagnosis of Onychomycosis: From Conventional Techniques and Dermoscopy to Artificial Intelligence. Frontiers in medicine. 2021;8:637216.
254. Lino-Silva LS, Xinaxtle DL. Artificial intelligence technology applications in the pathologic diagnosis of the gastrointestinal tract. Future oncology (London, England). 2020;16(34):2845-51.
255. Mahmood H, Shaban M, Rajpoot N, Khurram SA. Artificial Intelligence-based methods in head and neck cancer diagnosis: an overview. British journal of cancer. 2021;124(12):1934-40.
256. Mainali S, Darsie ME, Smetana KS. Machine Learning in Action: Stroke Diagnosis and Outcome Prediction. Frontiers in neurology. 2021;12:734345.
257. Mann NH, 3rd, Brown MD. Artificial intelligence in the diagnosis of low back pain. The Orthopedic clinics of North America. 1991;22(2):303-14.

258. Mansourian M, Khademi S, Marateb HR. A Comprehensive Review of Computer-Aided Diagnosis of Major Mental and Neurological Disorders and Suicide: A Biostatistical Perspective on Data Mining. Diagnostics (Basel, Switzerland). 2021;11(3).
259. Martin-Isla C, Campello VM, Izquierdo C, Raisi-Estabragh Z, Baeßler B, Petersen SE, et al. Image-Based Cardiac Diagnosis With Machine Learning: A Review. Frontiers in cardiovascular medicine. 2020;7:1.
260. Mata LA, Retamero JA, Gupta RT, García Figueras R, Luna A. Artificial Intelligence-assisted Prostate Cancer Diagnosis: Radiologic-Pathologic Correlation. Radiographics : a review publication of the Radiological Society of North America, Inc. 2021;41(6):1676-97.
261. Mayro EL, Wang M, Elze T, Pasquale LR. The impact of artificial intelligence in the diagnosis and management of glaucoma. Eye (London, England). 2020;34(1):1-11.
262. McCarthy JF, Marx KA, Hoffman PE, Gee AG, O'Neil P, Ujwal ML, et al. Applications of machine learning and high-dimensional visualization in cancer detection, diagnosis, and management. Annals of the New York Academy of Sciences. 2004;1020:239-62.
263. McDonnell JM, Evans SR, McCarthy L, Temperley H, Waters C, Ahern D, et al. The diagnostic and prognostic value of artificial intelligence and artificial neural networks in spinal surgery : a narrative review. The bone & joint journal. 2021;103-b(9):1442-8.
264. Mirzaei G, Adeli A, Adeli H. Imaging and machine learning techniques for diagnosis of Alzheimer's disease. Reviews in the neurosciences. 2016;27(8):857-70.
265. Mondal MRH, Bharati S, Podder P. Diagnosis of COVID-19 Using Machine Learning and Deep Learning: A Review. Current medical imaging. 2021;17(12):1403-18.
266. Montazeri M, ZahediNasab R, Farahani A, Mohseni H, Ghasemian F. Machine Learning Models for Image-Based Diagnosis and Prognosis of COVID-19: Systematic Review. JMIR medical informatics. 2021;9(4):e25181.
267. Moon SJ, Hwang J, Kana R, Torous J, Kim JW. Accuracy of Machine Learning Algorithms for the Diagnosis of Autism Spectrum Disorder: Systematic Review and Meta-Analysis of Brain Magnetic Resonance Imaging Studies. JMIR mental health. 2019;6(12):e14108.
268. Mortazavi H, Safi Y, Baharvand M, Jafari S, Anbari F, Rahmani S. Oral White Lesions: An Updated Clinical Diagnostic Decision Tree. Dentistry journal. 2019;7(1).
269. Mortazavi H, Safi Y, Baharvand M, Rahmani S. Diagnostic Features of Common Oral Ulcerative Lesions: An Updated Decision Tree. International journal of dentistry. 2016;2016:7278925.
270. Muhsen IN, Shyr D, Sung AD, Hashmi SK. Machine Learning Applications in the Diagnosis of Benign and Malignant Hematological Diseases. Clinical hematology international. 2021;3(1):13-20.
271. Mulrenan C, Rhode K, Fischer BM. A Literature Review on the Use of Artificial Intelligence for the Diagnosis of COVID-19 on CT and Chest X-ray. Diagnostics (Basel, Switzerland). 2022;12(4).
272. Mun SK, Wong KH, Lo SB, Li Y, Bayarsaikhan S. Artificial Intelligence for the Future Radiology Diagnostic Service. Frontiers in molecular biosciences. 2020;7:614258.
273. Nabizadeh F, Masrouri S, Ramezannezhad E, Ghaderi A, Sharafi AM, Soraneh S, et al. Artificial intelligence in the diagnosis of multiple sclerosis: A systematic review. Multiple sclerosis and related disorders. 2022;59:103673.
274. Nagarajan VD, Lee SL, Robertus JL, Nienaber CA, Trayanova NA, Ernst S. Artificial intelligence in the diagnosis and management of arrhythmias. European heart journal. 2021;42(38):3904-16.
275. Nazarian S, Glover B, Ashrafian H, Darzi A, Teare J. Diagnostic Accuracy of Artificial Intelligence and Computer-Aided Diagnosis for the Detection and Characterization of Colorectal Polyps: Systematic Review and Meta-analysis. Journal of medical Internet research. 2021;23(7):e27370.
276. Nichols JA, Herbert Chan HW, Baker MAB. Machine learning: applications of artificial intelligence to imaging and diagnosis. Biophysical reviews. 2019;11(1):111-8.
277. Nogay HS, Adeli H. Machine learning (ML) for the diagnosis of autism spectrum disorder (ASD) using brain imaging. Reviews in the neurosciences. 2020.
278. Olsen CR, Mentz RJ, Anstrom KJ, Page D, Patel PA. Clinical applications of machine learning in the diagnosis, classification, and prediction of heart failure. American heart journal. 2020;229:1-17.

279. O'Sullivan S, Janssen M, Holzinger A, Nevejans N, Eminaga O, Meyer CP, et al. Explainable artificial intelligence (XAI): closing the gap between image analysis and navigation in complex invasive diagnostic procedures. World journal of urology. 2022;40(5):1125-34.
280. Ozsahin I, Sekeroglu B, Musa MS, Mustapha MT, Uzun Ozsahin D. Review on Diagnosis of COVID-19 from Chest CT Images Using Artificial Intelligence. Computational and mathematical methods in medicine. 2020;2020:9756518.
281. Pantelis AG, Panagopoulou PA, Lapatsanis DP. Artificial Intelligence and Machine Learning in the Diagnosis and Management of Gastroenteropancreatic Neuroendocrine Neoplasms-A Scoping Review. Diagnostics (Basel, Switzerland). 2022;12(4).
282. Pei Q, Luo Y, Chen Y, Li J, Xie D, Ye T. Artificial intelligence in clinical applications for lung cancer: diagnosis, treatment and prognosis. Clinical chemistry and laboratory medicine. 2022.
283. Peña-Reyes CA. Evolutionary fuzzy modeling human diagnostic decisions. Annals of the New York Academy of Sciences. 2004;1020:190-211.
284. Periyasamy R, Vibashan VS, Varghese GT, Aleem MA. Machine Learning Techniques for the Diagnosis of Attention-Deficit/Hyperactivity Disorder from Magnetic Resonance Imaging: A Concise Review. Neurology India. 2021;69(6):1518-23.
285. Prasoppokakorn T, Tiyarattanachai T, Chaiteerakij R, Decharatanachart P, Mekaroonkamol P, Ridtitid W, et al. Application of artificial intelligence for diagnosis of pancreatic ductal adenocarcinoma by EUS: A systematic review and meta-analysis. Endoscopic ultrasound. 2022;11(1):17-26.
286. Qin C, Hu W, Wang X, Ma X. Application of Artificial Intelligence in Diagnosis of Craniopharyngioma. Frontiers in neurology. 2021;12:752119.
287. Qin K, Li J, Fang Y, Xu Y, Wu J, Zhang H, et al. Convolution neural network for the diagnosis of wireless capsule endoscopy: a systematic review and meta-analysis. Surgical endoscopy. 2022;36(1):16-31.
288. Qiu H, Ding S, Liu J, Wang L, Wang X. Applications of Artificial Intelligence in Screening, Diagnosis, Treatment, and Prognosis of Colorectal Cancer. Current oncology (Toronto, Ont). 2022;29(3):1773-95.
289. Raghavendra U, Acharya UR, Adeli H. Artificial Intelligence Techniques for Automated Diagnosis of Neurological Disorders. European neurology. 2019;82(1-3):41-64.
290. Rajpara SM, Botello AP, Townend J, Ormerod AD. Systematic review of dermoscopy and digital dermoscopy/ artificial intelligence for the diagnosis of melanoma. The British journal of dermatology. 2009;161(3):591-604.
291. Rajula HSR, Verlato G, Manchia M, Antonucci N, Fanos V. Comparison of Conventional Statistical Methods with Machine Learning in Medicine: Diagnosis, Drug Development, and Treatment. Medicina (Kaunas, Lithuania). 2020;56(9).
292. Rauschert S, Raubenheimer K, Melton PE, Huang RC. Machine learning and clinical epigenetics: a review of challenges for diagnosis and classification. Clinical epigenetics. 2020;12(1):51.
293. Reyes LT, Knorst JK, Ortiz FR, Ardenghi TM. Scope and challenges of machine learning-based diagnosis and prognosis in clinical dentistry: A literature review. Journal of clinical and translational research. 2021;7(4):523-39.
294. Richter T, Fishbain B, Richter-Levin G, Okon-Singer H. Machine Learning-Based Behavioral Diagnostic Tools for Depression: Advances, Challenges, and Future Directions. Journal of personalized medicine. 2021;11(10).
295. Sadeghi D, Shoeibi A, Ghassemi N, Moridian P, Khadem A, Alizadehsani R, et al. An overview of artificial intelligence techniques for diagnosis of Schizophrenia based on magnetic resonance imaging modalities: Methods, challenges, and future works. Comput Biol Med. 2022;146:105554.
296. Salah HT, Muhsen IN, Salama ME, Owaidah T, Hashmi SK. Machine learning applications in the diagnosis of leukemia: Current trends and future directions. International journal of laboratory hematology. 2019;41(6):717-25.
297. Salazar H, Misra V, Swaminathan SS. Artificial intelligence and complex statistical modeling in glaucoma diagnosis and management. Current opinion in ophthalmology. 2021;32(2):105-17.

298. Sánchez de la Nava AM, Atienza F, Bermejo J, Fernández-Avilés F. Artificial intelligence for a personalized diagnosis and treatment of atrial fibrillation. American journal of physiology Heart and circulatory physiology. 2021;320(4):H1337-h47.
299. Sanders WE, Jr., Burton T, Khosousi A, Ramchandani S. Machine learning: at the heart of failure diagnosis. Current opinion in cardiology. 2021;36(2):227-33.
300. Santos MK, Ferreira Júnior JR, Wada DT, Tenório APM, Barbosa MHN, Marques PMA. Artificial intelligence, machine learning, computer-aided diagnosis, and radiomics: advances in imaging towards to precision medicine. Radiologia brasileira. 2019;52(6):387-96.
301. Scruggs BA, Chan RVP, Kalpathy-Cramer J, Chiang MF, Campbell JP. Artificial Intelligence in Retinopathy of Prematurity Diagnosis. Translational vision science & technology. 2020;9(2):5.
302. Sharma P, Suehling M, Flohr T, Comaniciu D. Artificial Intelligence in Diagnostic Imaging: Status Quo, Challenges, and Future Opportunities. Journal of thoracic imaging. 2020;35 Suppl 1:S11-s6.
303. Shi F, Wang J, Shi J, Wu Z, Wang Q, Tang Z, et al. Review of Artificial Intelligence Techniques in Imaging Data Acquisition, Segmentation, and Diagnosis for COVID-19. IEEE Rev Biomed Eng. 2021;14:4-15.
304. Shiraishi J, Li Q, Appelbaum D, Doi K. Computer-aided diagnosis and artificial intelligence in clinical imaging. Seminars in nuclear medicine. 2011;41(6):449-62.
305. Soldozy S, Farzad F, Young S, Yağmurlu K, Norat P, Sokolowski J, et al. Pituitary Tumors in the Computational Era, Exploring Novel Approaches to Diagnosis, and Outcome Prediction with Machine Learning. World neurosurgery. 2021;146:315-21.e1.
306. Song DY, Kim SY, Bong G, Kim JM, Yoo HJ. The Use of Artificial Intelligence in Screening and Diagnosis of Autism Spectrum Disorder: A Literature Review. Soa--ch'ongsonyon chongsin uihak = Journal of child & adolescent psychiatry. 2019;30(4):145-52.
307. Sun D. Development of New Diagnostic Techniques - Machine Learning. Advances in experimental medicine and biology. 2017;1010:203-15.
308. Svenstrup D, Jørgensen HL, Winther O. Rare disease diagnosis: A review of web search, social media and large-scale data-mining approaches. Rare diseases (Austin, Tex). 2015;3(1):e1083145.
309. Talpur S, Azim F, Rashid M, Syed SA, Talpur BA, Khan SJ. Uses of Different Machine Learning Algorithms for Diagnosis of Dental Caries. Journal of healthcare engineering. 2022;2022:5032435.
310. Teoh YX, Lai KW, Usman J, Goh SL, Mohafez H, Hasikin K, et al. Discovering Knee Osteoarthritis Imaging Features for Diagnosis and Prognosis: Review of Manual Imaging Grading and Machine Learning Approaches. Journal of healthcare engineering. 2022;2022:4138666.
311. Tripoliti EE, Papadopoulos TG, Karanasiou GS, Naka KK, Fotiadis DI. Heart Failure: Diagnosis, Severity Estimation and Prediction of Adverse Events Through Machine Learning Techniques. Computational and structural biotechnology journal. 2017;15:26-47.
312. Villanueva-Meyer JE, Chang P, Lupo JM, Hess CP, Flanders AE, Kohli M. Machine Learning in Neurooncology Imaging: From Study Request to Diagnosis and Treatment. AJR American journal of roentgenology. 2019;212(1):52-6.
313. Waljee AK, Weinheimer-Haus EM, Abubakar A, Ngugi AK, Siwo GH, Kwakye G, et al. Artificial intelligence and machine learning for early detection and diagnosis of colorectal cancer in sub-Saharan Africa. Gut. 2022;71(7):1259-65.
314. Waller J, O'Connor A, Rafaat E, Amireh A, Dempsey J, Martin C, et al. Applications and challenges of artificial intelligence in diagnostic and interventional radiology. Polish journal of radiology. 2022;87:e113-e7.
315. Walsh JA, Rozycki M, Yi E, Park Y. Application of machine learning in the diagnosis of axial spondyloarthritis. Current opinion in rheumatology. 2019;31(4):362-7.
316. Wang S, Hou Y, Li X, Meng X, Zhang Y, Wang X. Practical Implementation of Artificial Intelligence-Based Deep Learning and Cloud Computing on the Application of Traditional Medicine and Western Medicine in the Diagnosis and Treatment of Rheumatoid Arthritis. Frontiers in pharmacology. 2021;12:765435.

317. Wang Y, He X, Nie H, Zhou J, Cao P, Ou C. Application of artificial intelligence to the diagnosis and therapy of colorectal cancer. American journal of cancer research. 2020;10(11):3575-98.
318. Wang YC, Xu X, Hajra A, Apple S, Kharawala A, Duarte G, et al. Current Advancement in Diagnosing Atrial Fibrillation by Utilizing Wearable Devices and Artificial Intelligence: A Review Study. Diagnostics (Basel, Switzerland). 2022;12(3).
319. Weisberg EM, Chu LC, Fishman EK. The first use of artificial intelligence (AI) in the ER: triage not diagnosis. Emergency radiology. 2020;27(4):361-6.
320. Wells A, Patel S, Lee JB, Motaparthi K. Artificial intelligence in dermatopathology: Diagnosis, education, and research. Journal of cutaneous pathology. 2021;48(8):1061-8.
321. Xiong Y, Zhang Y, Zhang F, Wu C, Qin F, Yuan J. Applications of artificial intelligence in the diagnosis and prediction of erectile dysfunction: a narrative review. International journal of impotence research. 2022.
322. Yan Y, Yao XJ, Wang SH, Zhang YD. A Survey of Computer-Aided Tumor Diagnosis Based on Convolutional Neural Network. Biology. 2021;10(11).
323. Yang B, Veneziano D, Somani BK. Artificial intelligence in the diagnosis, treatment and prevention of urinary stones. Curr Opin Urol. 2020;30(6):782-7.
324. Yasmin F, Shah SMI, Naeem A, Shujauddin SM, Jabeen A, Kazmi S, et al. Artificial intelligence in the diagnosis and detection of heart failure: the past, present, and future. Reviews in cardiovascular medicine. 2021;22(4):1095-113.
325. Ye X, Zhao L, Wang L. Diagnostic Accuracy of Endoscopic Ultrasound with Artificial Intelligence for Gastrointestinal Stromal Tumors: A Meta-analysis. Journal of digestive diseases. 2022.
326. Yuan J, Ran X, Liu K, Yao C, Yao Y, Wu H, et al. Machine learning applications on neuroimaging for diagnosis and prognosis of epilepsy: A review. Journal of neuroscience methods. 2022;368:109441.
327. Zakhem GA, Motosko CC, Ho RS. How Should Artificial Intelligence Screen for Skin Cancer and Deliver Diagnostic Predictions to Patients? JAMA dermatology. 2018;154(12):1383-4.
328. Zech JR, Santomartino SM, Yi PH. Artificial Intelligence (AI) for Fracture Diagnosis: An Overview of Current Products and Considerations for Clinical Adoption, From the AJR Special Series on AI Applications. AJR American journal of roentgenology. 2022.
329. Zhang W, Chen X, Wong KC. Noninvasive early diagnosis of intestinal diseases based on artificial intelligence in genomics and microbiome. Journal of gastroenterology and hepatology. 2021;36(4):823-31.
330. Zhang X, Yang Y, Shen YW, Zhang KR, Jiang ZK, Ma LT, et al. Diagnostic accuracy and potential covariates of artificial intelligence for diagnosing orthopedic fractures: a systematic literature review and meta-analysis. European radiology. 2022.
331. Zhang Y, Weng Y, Lund J. Applications of Explainable Artificial Intelligence in Diagnosis and Surgery. Diagnostics (Basel, Switzerland). 2022;12(2).
332. Zhao J, Huang Y, Song Y, Xie D, Hu M, Qiu H, et al. Diagnostic accuracy and potential covariates for machine learning to identify IDH mutations in glioma patients: evidence from a meta-analysis. European radiology. 2020;30(8):4664-74.
333. Zhou S, Zhao J, Zhang L. Application of Artificial Intelligence on Psychological Interventions and Diagnosis: An Overview. Frontiers in psychiatry. 2022;13:811665.
334. Zhou W, Zhou L. Ultrasound for the Diagnosis of Biliary Atresia: From Conventional Ultrasound to Artificial Intelligence. Diagnostics (Basel, Switzerland). 2021;12(1).
335. Akinyelu AA, Zaccagna F, Grist JT, Castelli M, Rundo L. Brain Tumor Diagnosis Using Machine Learning, Convolutional Neural Networks, Capsule Neural Networks and Vision Transformers, Applied to MRI: A Survey. Journal of imaging. 2022;8(8).
336. Albahri AS, Hamid RA, Alwan JK, Al-Qays ZT, Zaidan AA, Zaidan BB, et al. Role of biological Data Mining and Machine Learning Techniques in Detecting and Diagnosing the Novel Coronavirus (COVID-19): A Systematic Review. Journal of medical systems. 2020;44(7):122.
337. Bang CS, Lee JJ, Baik GH. Artificial Intelligence for the Prediction of Helicobacter Pylori Infection in Endoscopic Images: Systematic Review and Meta-Analysis Of Diagnostic Test Accuracy. Journal of medical Internet research. 2020;22(9):e21983.

338. Basurto-Hurtado JA, Cruz-Albarran IA, Toledano-Ayala M, Ibarra-Manzano MA, Morales-Hernandez LA, Perez-Ramirez CA. Diagnostic Strategies for Breast Cancer Detection: From Image Generation to Classification Strategies Using Artificial Intelligence Algorithms. Cancers. 2022;14(14).
339. Boreak N. Effectiveness of Artificial Intelligence Applications Designed for Endodontic Diagnosis, Decision-making, and Prediction of Prognosis: A Systematic Review. The journal of contemporary dental practice. 2020;21(8):926-34.
340. Chen PC, Lu YR, Kang YN, Chang CC. The Accuracy of Artificial Intelligence in the Endoscopic Diagnosis of Early Gastric Cancer: Pooled Analysis Study. Journal of medical Internet research. 2022;24(5):e27694.
341. Cheung R, Chun J, Sheidow T, Motolko M, Malvankar-Mehta MS. Diagnostic accuracy of current machine learning classifiers for age-related macular degeneration: a systematic review and meta-analysis. Eye (London, England). 2022;36(5):994-1004.
342. Chidambaram S, Sounderajah V, Maynard N, Markar SR. Diagnostic Performance of Artificial Intelligence-Centred Systems in the Diagnosis and Postoperative Surveillance of Upper Gastrointestinal Malignancies Using Computed Tomography Imaging: A Systematic Review and Meta-Analysis of Diagnostic Accuracy. Annals of surgical oncology. 2022;29(3):1977-90.
343. Crowley RJ, Tan YJ, Ioannidis JPA. Empirical assessment of bias in machine learning diagnostic test accuracy studies. Journal of the American Medical Informatics Association : JAMIA. 2020;27(7):1092-101.
344. da Silva Neto SR, Tabosa Oliveira T, Teixeira IV, Aguiar de Oliveira SB, Souza Sampaio V, Lynn T, et al. Machine learning and deep learning techniques to support clinical diagnosis of arboviral diseases: A systematic review. PLoS neglected tropical diseases. 2022;16(1):e0010061.
345. Fernandes M, Corchado JM, Marreiros G. Machine learning techniques applied to mechanical fault diagnosis and fault prognosis in the context of real industrial manufacturing use-cases: a systematic literature review. Applied intelligence (Dordrecht, Netherlands). 2022:1-35.
346. Fitzsimmons L, Dewan M, Dexheimer JW. Diversity in Machine Learning: A Systematic Review of Text-Based Diagnostic Applications. Applied clinical informatics. 2022;13(3):569-82.
347. Foster KR, Koprowski R, Skufca JD. Machine learning, medical diagnosis, and biomedical engineering research - commentary. Biomedical engineering online. 2014;13:94.
348. Ghaderzadeh M, Aria M, Asadi F. X-Ray Equipped with Artificial Intelligence: Changing the COVID-19 Diagnostic Paradigm during the Pandemic. BioMed research international. 2021;2021:9942873.
349. Hardacre CJ, Robertshaw JA, Barratt SL, Adams HL, MacKenzie Ross RV, Robinson GR, et al. Diagnostic test accuracy of artificial intelligence analysis of cross-sectional imaging in pulmonary hypertension: a systematic literature review. The British journal of radiology. 2021;94(1128):20210332.
350. Harris M, Qi A, Jeagal L, Torabi N, Menzies D, Korobitsyn A, et al. A systematic review of the diagnostic accuracy of artificial intelligence-based computer programs to analyze chest x-rays for pulmonary tuberculosis. PloS one. 2019;14(9):e0221339.
351. Hinterwimmer F, Consalvo S, Neumann J, Rueckert D, von Eisenhart-Rothe R, Burgkart R. Applications of machine learning for imaging-driven diagnosis of musculoskeletal malignancies-a scoping review. European radiology. 2022.
352. Huang G, Wei X, Tang H, Bai F, Lin X, Xue D. A systematic review and meta-analysis of diagnostic performance and physicians' perceptions of artificial intelligence (AI)-assisted CT diagnostic technology for the classification of pulmonary nodules. Journal of thoracic disease. 2021;13(8):4797-811.
353. Iannattone PA, Zhao X, VanHouten J, Garg A, Huynh T. Artificial Intelligence for Diagnosis of Acute Coronary Syndromes: A Meta-analysis of Machine Learning Approaches. The Canadian journal of cardiology. 2020;36(4):577-83.
354. Javeed A, Khan SU, Ali L, Ali S, Imrana Y, Rahman A. Machine Learning-Based Automated Diagnostic Systems Developed for Heart Failure Prediction Using Different Types of Data Modalities: A Systematic Review and Future Directions. Computational and mathematical methods in medicine. 2022;2022:9288452.

355. Jemioło P, Storman D, Orzechowski P. Artificial Intelligence for COVID-19 Detection in Medical Imaging-Diagnostic Measures and Wasting-A Systematic Umbrella Review. Journal of clinical medicine. 2022;11(7).
356. Joudar SS, Albahri AS, Hamid RA. Triage and priority-based healthcare diagnosis using artificial intelligence for autism spectrum disorder and gene contribution: A systematic review. Comput Biol Med. 2022;146:105553.
357. Kareemi H, Vaillancourt C, Rosenberg H, Fournier K, Yadav K. Machine Learning Versus Usual Care for Diagnostic and Prognostic Prediction in the Emergency Department: A Systematic Review. Academic emergency medicine : official journal of the Society for Academic Emergency Medicine. 2021;28(2):184-96.
358. Kartasalo K, Bulten W, Delahunt B, Chen PC, Pinckaers H, Olsson H, et al. Artificial Intelligence for Diagnosis and Gleason Grading of Prostate Cancer in Biopsies-Current Status and Next Steps. Eur Urol Focus. 2021;7(4):687-91.
359. Kumar Y, Koul A, Singla R, Ijaz MF. Artificial intelligence in disease diagnosis: a systematic literature review, synthesizing framework and future research agenda. J Ambient Intell Humaniz Comput. 2022:1-28.
360. Kunze KN, Rossi DM, White GM, Karhade AV, Deng J, Williams BT, et al. Diagnostic Performance of Artificial Intelligence for Detection of Anterior Cruciate Ligament and Meniscus Tears: A Systematic Review. Arthroscopy : the journal of arthroscopic & related surgery : official publication of the Arthroscopy Association of North America and the International Arthroscopy Association. 2021;37(2):771-81.
361. Luo D, Kuang F, Du J, Zhou M, Liu X, Luo X, et al. Artificial Intelligence-Assisted Endoscopic Diagnosis of Early Upper Gastrointestinal Cancer: A Systematic Review and Meta-Analysis. Frontiers in oncology. 2022;12:855175.
362. Mahmood H, Shaban M, Indave BI, Santos-Silva AR, Rajpoot N, Khurram SA. Use of artificial intelligence in diagnosis of head and neck precancerous and cancerous lesions: A systematic review. Oral oncology. 2020;110:104885.
363. Mekki A, Dercle L, Lichtenstein P, Nasser G, Marabelle A, Champiat S, et al. Machine learning defined diagnostic criteria for differentiating pituitary metastasis from autoimmune hypophysitis in patients undergoing immune checkpoint blockade therapy. European journal of cancer (Oxford, England : 1990). 2019;119:44-56.
364. Miller RJH, Huang C, Liang JX, Slomka PJ. Artificial intelligence for disease diagnosis and risk prediction in nuclear cardiology. Journal of nuclear cardiology : official publication of the American Society of Nuclear Cardiology. 2022;29(4):1754-62.
365. Mohammad-Rahimi H, Nadimi M, Ghalyanchi-Langeroudi A, Taheri M, Ghafouri-Fard S. Application of Machine Learning in Diagnosis of COVID-19 Through X-Ray and CT Images: A Scoping Review. Frontiers in cardiovascular medicine. 2021;8:638011.
366. Mohan BP, Khan SR, Kassab LL, Ponnada S, Dulai PS, Kochhar GS. Accuracy of convolutional neural network-based artificial intelligence in diagnosis of gastrointestinal lesions based on endoscopic images: A systematic review and meta-analysis. Endoscopy international open. 2020;8(11):E1584-e94.
367. Murtagh P, Greene G, O'Brien C. Current applications of machine learning in the screening and diagnosis of glaucoma: a systematic review and Meta-analysis. International journal of ophthalmology. 2020;13(1):149-62.
368. Musri N, Christie B, Ichwan SJA, Cahyanto A. Deep learning convolutional neural network algorithms for the early detection and diagnosis of dental caries on periapical radiographs: A systematic review. Imaging science in dentistry. 2021;51(3):237-42.
369. Nakata N. Recent technical development of artificial intelligence for diagnostic medical imaging. Jpn J Radiol. 2019;37(2):103-8.
370. Nguyen NH, Picetti D, Dulai PS, Jairath V, Sandborn WJ, Ohno-Machado L, et al. Machine Learning-based Prediction Models for Diagnosis and Prognosis in Inflammatory Bowel Diseases: A Systematic Review. Journal of Crohn's & colitis. 2022;16(3):398-413.

371. Pandey I, Misra V, Pandey AT, Ramteke PW, Agrawal R. Artificial intelligence technologies empowering identification of novel diagnostic molecular markers in gastric cancer. Indian journal of pathology & microbiology. 2021;64(Supplement):S63-s8.
372. Pellegrini E, Ballerini L, Hernandez M, Chappell FM, González-Castro V, Anblagan D, et al. Machine learning of neuroimaging for assisted diagnosis of cognitive impairment and dementia: A systematic review. Alzheimer's & dementia (Amsterdam, Netherlands). 2018;10:519-35.
373. Potipimpanon P, Charakorn N, Hirunwiwatkul P. A comparison of artificial intelligence versus radiologists in the diagnosis of thyroid nodules using ultrasonography: a systematic review and meta-analysis. European archives of oto-rhino-laryngology : official journal of the European Federation of Oto-Rhino-Laryngological Societies (EUFOS) : affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery. 2022.
374. Reyes LT, Knorst JK, Ortiz FR, Ardenghi TM. Machine learning in the diagnosis and prognostic prediction of dental caries: a systematic review. Caries research. 2022.
375. Santana CP, de Carvalho EA, Rodrigues ID, Bastos GS, de Souza AD, de Brito LL. rs-fMRI and machine learning for ASD diagnosis: a systematic review and meta-analysis. Scientific reports. 2022;12(1):6030.
376. Sohn CK, Bisdas S. Diagnostic Accuracy of Machine Learning-Based Radiomics in Grading Gliomas: Systematic Review and Meta-Analysis. Contrast media & molecular imaging. 2020;2020:2127062.
377. Steardo L, Jr., Carbone EA, de Filippis R, Pisanu C, Segura-Garcia C, Squassina A, et al. Application of Support Vector Machine on fMRI Data as Biomarkers in Schizophrenia Diagnosis: A Systematic Review. Frontiers in psychiatry. 2020;11:588.
378. Thomsen K, Iversen L, Titlestad TL, Winther O. Systematic review of machine learning for diagnosis and prognosis in dermatology. The Journal of dermatological treatment. 2020;31(5):496-510.
379. Wang Q, Yuan L, Ding X, Zhou Z. Prediction and Diagnosis of Venous Thromboembolism Using Artificial Intelligence Approaches: A Systematic Review and Meta-Analysis. Clinical and applied thrombosis/hemostasis : official journal of the International Academy of Clinical and Applied Thrombosis/Hemostasis. 2021;27:10760296211021162.
380. Wang S, Zhang Y, Lei S, Zhu H, Li J, Wang Q, et al. Performance of deep neural network-based artificial intelligence method in diabetic retinopathy screening: a systematic review and meta-analysis of diagnostic test accuracy. European journal of endocrinology. 2020;183(1):41-9.
381. Wirries A, Geiger F, Oberkircher L, Jabari S. An Evolution Gaining Momentum-The Growing Role of Artificial Intelligence in the Diagnosis and Treatment of Spinal Diseases. Diagnostics (Basel, Switzerland). 2022;12(4).
382. Xie F, Zhang K, Li F, Ma G, Ni Y, Zhang W, et al. Diagnostic accuracy of convolutional neural network-based endoscopic image analysis in diagnosing gastric cancer and predicting its invasion depth: a systematic review and meta-analysis. Gastrointest Endosc. 2022;95(4):599-609.e7.
383. Yusuf M, Atal I, Li J, Smith P, Ravaud P, Fergie M, et al. Reporting quality of studies using machine learning models for medical diagnosis: a systematic review. BMJ open. 2020;10(3):e034568.

Appendix F: Meta-analyses

The inclusion criteria:

1) the article should be a journal article and not a conference presentation or other types

2) the meta-analysis article should examine and evaluate the classification algorithms used to diagnose a disease

Reference	The inclusion criteria	Types of ML methods		Type of evaluation methods		Investigated criteria
		Black-Box	White-Box	Different runs of one model	Different models	
(1)	✓		✓		✓	Accuracy
(2)	×(2)					
(3)	✓	✓			✓	Sensitivity and specificity
(4)	✓	✓			✓	Sensitivity and specificity
(5)	✓	✓			✓	Sensitivity and specificity
(6)	✓	✓			✓	Sensitivity and specificity
(7)	×(2)					
(8)	✓	✓			✓	Sensitivity and specificity
(9)	✓	✓			✓	Sensitivity and specificity
(10)	✓	✓			✓	Sensitivity and specificity
(11)	✓	✓			✓	Sensitivity and specificity
(12)	✓	✓			✓	Sensitivity and specificity
(13)	✓	✓			✓	Accuracy
(14)	✓	✓			✓	Sensitivity and specificity
(15)	✓	✓			✓	Accuracy
(16)	×(2)					
(17)	✓	✓			✓	Sensitivity and specificity
(18)	×(2)					
(19)	✓	✓			✓	Sensitivity and specificity
(20)	×(2)					
(21)	✓	✓			✓	Sensitivity and specificity
(22)	×(2)					
(23)	✓	✓			✓	Sensitivity and specificity
(24)	✓	✓			✓	Sensitivity and specificity
(25)	✓	✓			✓	Sensitivity and specificity
(26)	✓	✓			✓	Sensitivity and specificity
(27)	×(2)					
(28)	✓	✓			✓	Sensitivity and specificity
(29)	×(2)					
(30)	×(2)					
(31)	×(2)					

(32)	✓	✓			✓	Sensitivity and specificity
(33)	×(2)					
(34)	×(2)					
(35)	×(2)					
(36)	×(2)					
(37)	×(2)					
(38)	✓	✓			✓	Sensitivity and specificity
(39)	✓	✓			✓	Sensitivity and specificity
(40)	✓	✓			✓	Sensitivity and specificity
(41)	✓	✓			✓	Sensitivity, specificity, PPV and NPV
(42)	×(2)					
(43)	✓	✓			✓	Sensitivity and specificity
(44)	✓	✓			✓	Sensitivity and specificity
(45)	✓	✓			✓	Sensitivity, specificity, effective size, and diagnostic odds ratios
(46)	✓	✓			✓	Sensitivity and specificity
(47)	✓	✓			✓	Sensitivity and specificity
(48)	✓	✓			✓	Sensitivity and specificity
(49)	✓	✓			✓	Sensitivity, specificity, and diagnostic odds ratios
(50)	×(2)					
(51)	✓	✓			✓	Sensitivity and specificity
(52)	✓	✓			✓	Sensitivity, specificity, and diagnostic odds ratios
(53)	✓	✓			✓	Sensitivity and specificity
(54)	×(2)					
(55)	×(2)					
(56)	✓	✓			✓	Sensitivity and specificity
(57)	✓	✓			✓	Sensitivity and specificity
(58)	×(2)					
(59)	×(2)					
(60)	✓	✓			✓	Sensitivity and specificity
(61)	×(2)					
(62)	✓	✓			✓	Sensitivity and specificity
(63)	✓	✓			✓	Sensitivity and specificity
(64)	×(2)					
(65)	✓	✓			✓	Sensitivity and specificity
(66)	×(2)					
(67)	✓	✓			✓	Sensitivity, specificity, and diagnostic odds ratios
(68)	✓	✓			✓	Sensitivity and specificity

(69)	✓	✓			✓	Sensitivity and specificity
(70)	✓	✓			✓	Sensitivity and specificity
(71)	✓	✓			✓	standard mean difference

References:

1. Ahmadi H, Gholamzadeh M, Shahmoradi L, Nilashi M, Rashvand P. Diseases diagnosis using fuzzy logic methods: A systematic and meta-analysis review. Computer Methods and Programs in Biomedicine. 2018;161:145-72.
2. Ahsan MM, Siddique Z. Machine learning-based heart disease diagnosis: A systematic literature review. Artificial Intelligence in Medicine. 2022;128.
3. Bang CS, Lee JJ, Baik GH. Artificial Intelligence for the Prediction of Helicobacter Pylori Infection in Endoscopic Images: Systematic Review and Meta-Analysis Of Diagnostic Test Accuracy. J Med Internet Res. 2020;22(9):e21983.
4. Bedrikovetski S, Dudi-Venkata NN, Maicas G, Kroon HM, Seow W, Carneiro G, et al. Artificial intelligence for the diagnosis of lymph node metastases in patients with abdominopelvic malignancy: A systematic review and meta-analysis. Artif Intell Med. 2021;113:102022.
5. Cao Z, Chen F, Grais EM, Yue F, Cai Y, Swanepoel W, et al. Machine Learning in Diagnosing Middle Ear Disorders Using Tympanic Membrane Images: A Meta-Analysis. The Laryngoscope. 2022.
6. Castaldo R, Cavaliere C, Soricelli A, Salvatore M, Pecchia L, Franzese M. Radiomic and genomic machine learning method performance for prostate cancer diagnosis: Systematic literature review. Journal of Medical Internet Research. 2021;23(4).
7. Chang CH, Lin CH, Lane HY. Machine learning and novel biomarkers for the diagnosis of alzheimer's disease. International Journal of Molecular Sciences. 2021;22(5):1-12.
8. Chaurasia AK, Greatbatch CJ, Hewitt AW. Diagnostic Accuracy of Artificial Intelligence in Glaucoma Screening and Clinical Practice. Journal of glaucoma. 2022;31(5):285-99.
9. Chen C, Qin Y, Chen H, Zhu D, Gao F, Zhou X. A meta-analysis of the diagnostic performance of machine learning-based MRI in the prediction of axillary lymph node metastasis in breast cancer patients. Insights into Imaging. 2021;12(1).
10. Chen PC, Lu YR, Kang YN, Chang CC. The Accuracy of Artificial Intelligence in the Endoscopic Diagnosis of Early Gastric Cancer: Pooled Analysis Study. Journal of Medical Internet Research. 2022;24(5).
11. Cheung R, Chun J, Sheidow T, Motolko M, Malvankar-Mehta MS. Diagnostic accuracy of current machine learning classifiers for age-related macular degeneration: a systematic review and meta-analysis. Eye (London, England). 2022;36(5):994-1004.
12. Chidambaram S, Sounderajah V, Maynard N, Markar SR. Diagnostic Performance of Artificial Intelligence-Centred Systems in the Diagnosis and Postoperative Surveillance of Upper Gastrointestinal Malignancies Using Computed Tomography Imaging: A Systematic Review and Meta-Analysis of Diagnostic Accuracy. Annals of surgical oncology. 2022;29(3):1977-90.
13. Dilaghi E, Lahner E, Annibale B, Esposito G. Systematic review and meta-analysis: Artificial intelligence for the diagnosis of gastric precancerous lesions and Helicobacter pylori infection. Digestive and liver disease : official journal of the Italian Society of Gastroenterology and the Italian Association for the Study of the Liver. 2022.
14. Dumitrescu EA, Ungureanu BS, Cazacu IM, Florescu LM, Streba L, Croitoru VM, et al. Diagnostic Value of Artificial Intelligence-Assisted Endoscopic Ultrasound for Pancreatic Cancer: A Systematic Review and Meta-Analysis. Diagnostics. 2022;12(2).
15. Fleuren LM, Klausch TLT, Zwager CL, Schoonmade LJ, Guo T, Roggeveen LF, et al. Machine learning for the prediction of sepsis: a systematic review and meta-analysis of diagnostic test accuracy. Intensive care medicine. 2020;46(3):383-400.

16. Fowler GE, Macefield RC, Hardacre C, Callaway MP, Smart NJ, Blencowe NS. Artificial intelligence as a diagnostic aid in cross-sectional radiological imaging of the abdominopelvic cavity: a protocol for a systematic review. BMJ Open. 2021;11(10):e054411.
17. Gao L, Jiao T, Feng Q, Wang W. Application of artificial intelligence in diagnosis of osteoporosis using medical images: a systematic review and meta-analysis. Osteoporosis International. 2021;32(7):1279-86.
18. Hafizovic L, Causevic A, Deumic A, Becirovic LS, Pokvic LG, Badnjevic A, editors. The Use of Artificial Intelligence in Diagnostic Medical Imaging: Systematic Literature Review2021.
19. Hanis TM, Islam MA, Musa KI. Diagnostic Accuracy of Machine Learning Models on Mammography in Breast Cancer Classification: A Meta-Analysis. Diagnostics. 2022;12(7).
20. Hardacre CJ, Robertshaw JA, Barratt SL, Adams HL, MacKenzie Ross RV, Robinson GR, et al. Diagnostic test accuracy of artificial intelligence analysis of cross-sectional imaging in pulmonary hypertension: a systematic literature review. The British journal of radiology. 2021;94(1128):20210332.
21. Hoodbhoy Z, Jiwani U, Sattar S, Salam R, Hasan B, Das JK. Diagnostic Accuracy of Machine Learning Models to Identify Congenital Heart Disease: A Meta-Analysis. Frontiers in Artificial Intelligence. 2021;4.
22. Hou Q, Bing ZT, Hu C, Li MY, Yang KH, Mo Z, et al. RankProd Combined with Genetic Algorithm Optimized Artificial Neural Network Establishes a Diagnostic and Prognostic Prediction Model that Revealed C1QTNF3 as a Biomarker for Prostate Cancer. EBioMedicine. 2018;32:234-44.
23. Huang G, Wei X, Tang H, Bai F, Lin X, Xue D. A systematic review and meta-analysis of diagnostic performance and physicians' perceptions of artificial intelligence (AI)-assisted CT diagnostic technology for the classification of pulmonary nodules. Journal of thoracic disease. 2021;13(8):4797-811.
24. Huang H, Wang FF, Luo S, Chen G, Tang G. Diagnostic performance of radiomics using machine learning algorithms to predict MGMT promoter methylation status in glioma patients: a meta-analysis. Diagnostic and interventional radiology (Ankara, Turkey). 2021;27(6):716-24.
25. Iannattone PA, Zhao X, VanHouten J, Garg A, Huynh T. Artificial Intelligence for Diagnosis of Acute Coronary Syndromes: A Meta-analysis of Machine Learning Approaches. The Canadian journal of cardiology. 2020;36(4):577-83.
26. Jiang K, Jiang X, Pan J, Wen Y, Huang Y, Weng S, et al. Corrigendum: Current Evidence and Future Perspective of Accuracy of Artificial Intelligence Application for Early Gastric Cancer Diagnosis With Endoscopy: A Systematic and Meta-Analysis. Front Med (Lausanne). 2021;8:698483.
27. Jones OT, Calanzani N, Saji S, Duffy SW, Emery J, Hamilton W, et al. Artificial intelligence techniques that may be applied to primary care data to facilitate earlier diagnosis of cancer: Systematic review. Journal of Medical Internet Research. 2021;23(3).
28. Kailin J, Xiaotao J, Jinglin P, Yi W, Yuanchen H, Senhui W, et al. Current Evidence and Future Perspective of Accuracy of Artificial Intelligence Application for Early Gastric Cancer Diagnosis With Endoscopy: A Systematic and Meta-Analysis. Frontiers in Medicine. 2021;8.
29. Kareemi H, Vaillancourt C, Rosenberg H, Fournier K, Yadav K. Machine Learning Versus Usual Care for Diagnostic and Prognostic Prediction in the Emergency Department: A Systematic Review. Academic emergency medicine : official journal of the Society for Academic Emergency Medicine. 2021;28(2):184-96.
30. Khatri I, Bhasin MK. A Transcriptomics-Based Meta-Analysis Combined With Machine Learning Identifies a Secretory Biomarker Panel for Diagnosis of Pancreatic Adenocarcinoma. Frontiers in genetics. 2020;11:572284.
31. Kim DW, Jang HY, Kim KW, Shin Y, Park SH. Design characteristics of studies reporting the performance of artificial intelligence algorithms for diagnostic analysis of medical images: Results from recently published papers. Korean Journal of Radiology. 2019;20(3):405-10.
32. Kim S, Lee K. Screening for Depression in Mobile Devices Using Patient Health Questionnaire-9 (PHQ-9) Data: A Diagnostic Meta-Analysis via Machine Learning Methods. Neuropsychiatric disease and treatment. 2021;17:3415-30.

33. Kumar Y, Koul A, Singla R, Ijaz MF. Artificial intelligence in disease diagnosis: a systematic literature review, synthesizing framework and future research agenda. Journal of Ambient Intelligence and Humanized Computing. 2022.
34. Kundeti SR, Vaidyanathan MK, Shivashankar B, Gorthi SP. Systematic review protocol to assess artificial intelligence diagnostic accuracy performance in detecting acute ischaemic stroke and large-vessel occlusions on CT and MR medical imaging. BMJ Open. 2021;11(3).
35. Lao Y, Jia B, Yan P, Pan M, Hui X, Li J, et al. Diagnostic accuracy of machine-learning-assisted detection for anterior cruciate ligament injury based on magnetic resonance imaging: Protocol for a systematic review and meta-analysis. Medicine (Baltimore). 2019;98(50):e18324.
36. Liu Q, Qu M, Sun L, Wang H. Accuracy of ultrasonic artificial intelligence in diagnosing benign and malignant breast diseases A protocol for systematic review and meta-analysis. Medicine (United States). 2021;100(50):E28289.
37. Long G, Yang C. A sixgene support vector machine classifier contributes to the diagnosis of pediatric septic shock. Molecular medicine reports. 2020;21(3):1561-71.
38. Luo D, Kuang F, Du J, Zhou M, Liu X, Luo X, et al. Artificial Intelligence-Assisted Endoscopic Diagnosis of Early Upper Gastrointestinal Cancer: A Systematic Review and Meta-Analysis. Front Oncol. 2022;12:855175.
39. Ma H, Wang L, Chen Y, Tian L. Convolutional neural network-based artificial intelligence for the diagnosis of early esophageal cancer based on endoscopic images: A meta-analysis. Saudi journal of gastroenterology : official journal of the Saudi Gastroenterology Association. 2022.
40. Moezzi M, Shirbandi K, Shahvandi HK, Arjmand B, Rahim F. The diagnostic accuracy of Artificial Intelligence-Assisted CT imaging in COVID-19 disease: A systematic review and meta-analysis. Informatics in Medicine Unlocked. 2021;24.
41. Mohan BP, Khan SR, Kassab LL, Ponnada S, Dulai PS, Kochhar GS. Accuracy of convolutional neural network-based artificial intelligence in diagnosis of gastrointestinal lesions based on endoscopic images: A systematic review and meta-analysis. Endoscopy international open. 2020;8(11):E1584-e94.
42. Mondal MRH, Bharati S, Podder P. Diagnosis of COVID-19 Using Machine Learning and Deep Learning: A Review. Current medical imaging. 2021;17(12):1403-18.
43. Moon SJ, Hwang J, Kana R, Torous J, Kim JW. Accuracy of Machine Learning Algorithms for the Diagnosis of Autism Spectrum Disorder: Systematic Review and Meta-Analysis of Brain Magnetic Resonance Imaging Studies. JMIR mental health. 2019;6(12):e14108.
44. Murtagh P, Greene G, O'Brien C. Current applications of machine learning in the screening and diagnosis of glaucoma: a systematic review and Meta-analysis. International journal of ophthalmology. 2020;13(1):149-62.
45. Nazarian S, Glover B, Ashrafian H, Darzi A, Teare J. Diagnostic Accuracy of Artificial Intelligence and Computer-Aided Diagnosis for the Detection and Characterization of Colorectal Polyps: Systematic Review and Meta-analysis. J Med Internet Res. 2021;23(7):e27370.
46. Nindrea RD, Aryandono T, Lazuardi L, Dwiprahasto I. Diagnostic accuracy of different machine learning algorithms for breast cancer risk calculation: A meta-analysis. Asian Pacific Journal of Cancer Prevention. 2018;19(7):1747-52.
47. Phillips M, Greenhalgh J, Marsden H, Palamaras I. Detection of Malignant Melanoma Using Artificial Intelligence: An Observational Study of Diagnostic Accuracy. Dermatology practical & conceptual. 2020;10(1):e2020011.
48. Potipimpanon P, Charakorn N, Hirunwiwatkul P. A comparison of artificial intelligence versus radiologists in the diagnosis of thyroid nodules using ultrasonography: a systematic review and meta-analysis. European archives of oto-rhino-laryngology : official journal of the European Federation of Oto-Rhino-Laryngological Societies (EUFOS) : affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery. 2022.
49. Prasoppokakorn T, Tiyarattanachai T, Chaiteerakij R, Decharatanachart P, Mekaroonkamol P, Ridtitid W, et al. Application of artificial intelligence for diagnosis of pancreatic ductal adenocarcinoma by EUS: A systematic review and meta-analysis. Endoscopic ultrasound. 2022;11(1):17-26.

50. Qin B, Quan Q, Wu J, Liang L, Li D. Diagnostic performance of artificial intelligence to detect genetic diseases with facial phenotypes: A protocol for systematic review and meta analysis. Medicine. 2020;99(27):e20989.
51. Qin K, Li J, Fang Y, Xu Y, Wu J, Zhang H, et al. Convolution neural network for the diagnosis of wireless capsule endoscopy: a systematic review and meta-analysis. Surgical endoscopy. 2022;36(1):16-31.
52. Rajpara SM, Botello AP, Townend J, Ormerod AD. Systematic review of dermoscopy and digital dermoscopy/ artificial intelligence for the diagnosis of melanoma. The British journal of dermatology. 2009;161(3):591-604.
53. Santana CP, de Carvalho EA, Rodrigues ID, Bastos GS, de Souza AD, de Brito LL. rs-fMRI and machine learning for ASD diagnosis: a systematic review and meta-analysis. Scientific reports. 2022;12(1):6030.
54. Schaack D, Weigand MA, Uhle F. Comparison of machine-learning methodologies for accurate diagnosis of sepsis using microarray gene expression data. PloS one. 2021;16(5):e0251800.
55. Shen J, Zhang CJP, Jiang B, Chen J, Song J, Liu Z, et al. Artificial intelligence versus clinicians in disease diagnosis: Systematic review. JMIR Medical Informatics. 2019;7(3).
56. Sohn CK, Bisdas S. Diagnostic Accuracy of Machine Learning-Based Radiomics in Grading Gliomas: Systematic Review and Meta-Analysis. Contrast media & molecular imaging. 2020;2020:2127062.
57. Sokouti M, Sadeghi R, Pashazadeh S, Abadi SEH, Sokouti M, Ghojazadeh M, et al. Investigation of diagnostic value of artificial intelligence systems in the diagnosis of breast cancer based on histopathological images using meta-MUMS DTA tool. Epidemiology Biostatistics and Public Health. 2020;17(2):1-13.
58. Telecan T, Andras I, Crisan N, Giurgiu L, Cătа ED, Caraiani C, et al. More than Meets the Eye: Using Textural Analysis and Artificial Intelligence as Decision Support Tools in Prostate Cancer Diagnosis—A Systematic Review. Journal of Personalized Medicine. 2022;12(6).
59. Vey J, Kapsner LA, Fuchs M, Unberath P, Veronesi G, Kunz M. A Toolbox for Functional Analysis and the Systematic Identification of Diagnostic and Prognostic Gene Expression Signatures Combining Meta-Analysis and Machine Learning. Cancers. 2019;11(10).
60. Visaggi P, Barberio B, Gregori D, Azzolina D, Martinato M, Hassan C, et al. Systematic review with meta-analysis: artificial intelligence in the diagnosis of oesophageal diseases. Alimentary Pharmacology and Therapeutics. 2022;55(5):528-40.
61. Visaggi P, De Bortoli N, Barberio B, Savarino V, Oleas R, Rosi EM, et al. Artificial intelligence in the diagnosis of upper gastrointestinal diseases. Journal of Clinical Gastroenterology. 2022;56(1):23-35.
62. Wang Q, Yuan L, Ding X, Zhou Z. Prediction and Diagnosis of Venous Thromboembolism Using Artificial Intelligence Approaches: A Systematic Review and Meta-Analysis. Clinical and applied thrombosis/hemostasis : official journal of the International Academy of Clinical and Applied Thrombosis/Hemostasis. 2021;27:10760296211021162.
63. Wang S, Zhang Y, Lei S, Zhu H, Li J, Wang Q, et al. Performance of deep neural network-based artificial intelligence method in diabetic retinopathy screening: a systematic review and meta-analysis of diagnostic test accuracy. European journal of endocrinology. 2020;183(1):41-9.
64. Wei W, Yang X. Comparison of Diagnosis Accuracy between a Backpropagation Artificial Neural Network Model and Linear Regression in Digestive Disease Patients: An Empirical Research. Computational and Mathematical Methods in Medicine. 2021;2021.
65. Xie F, Zhang K, Li F, Ma G, Ni Y, Zhang W, et al. Diagnostic accuracy of convolutional neural network-based endoscopic image analysis in diagnosing gastric cancer and predicting its invasion depth: a systematic review and meta-analysis. Gastrointest Endosc. 2022;95(4):599-609.e7.
66. Yang Y, Jin G, Pang Y, Wang W, Zhang H, Tuo G, et al. The diagnostic accuracy of artificial intelligence in thoracic diseases: A protocol for systematic review and meta-analysis. Medicine (United States). 2020;99(7).

67. Ye X, Zhao L, Wang L. Diagnostic Accuracy of Endoscopic Ultrasound with Artificial Intelligence for Gastrointestinal Stromal Tumors: A Meta-analysis. Journal of digestive diseases. 2022.
68. Zhang J, Li L, Zhe X, Tang M, Zhang X, Lei X, et al. The Diagnostic Performance of Machine Learning-Based Radiomics of DCE-MRI in Predicting Axillary Lymph Node Metastasis in Breast Cancer: A Meta-Analysis. Frontiers in Oncology. 2022;12.
69. Zhang X, Yang Y, Shen YW, Zhang KR, Jiang ZK, Ma LT, et al. Diagnostic accuracy and potential covariates of artificial intelligence for diagnosing orthopedic fractures: a systematic literature review and meta-analysis. European radiology. 2022.
70. Zhao J, Huang Y, Song Y, Xie D, Hu M, Qiu H, et al. Diagnostic accuracy and potential covariates for machine learning to identify IDH mutations in glioma patients: evidence from a meta-analysis. European radiology. 2020;30(8):4664-74.
71. Zhao S, Bao Z, Zhao X, Xu M, Li MD, Yang Z. Identification of Diagnostic Markers for Major Depressive Disorder Using Machine Learning Methods. Frontiers in neuroscience. 2021;15:645998.

Appendix G: Medical Machine Learning Framework

Table 3. The search queries to retrieve all articles related to the medical machine learning development in clinical practice.

Citation Database	Search string	Date	Returned
Scopus	TITLE ((clinical OR medical) AND ("machine learning" OR "data mining" OR "artificial intelligence") AND (guideline OR framework OR development))	May. 17, 2023	272

References:

.1 Zou P, Zhang L, Zhang R, Wang C, Lin X, Lai C, et al. Development and Validation of a Combined MRI Radiomics, Imaging and Clinical Parameter-Based Machine Learning Model for Identifying Idiopathic Central Precocious Puberty in Girls. Journal of Magnetic Resonance Imaging. 2023.10.1002/jmri.28709

.2 Zenbout I, Bouramoul A, Meshoul S, Amrane M. Efficient Bioinspired Feature Selection and Machine Learning Based Framework Using Omics Data and Biological Knowledge Data Bases in Cancer Clinical Endpoint Prediction. IEEE Access. 2023;11:2674-99.10.1109/ACCESS.2023.3234294

.3 Yuan L, Yang L, Zhang S, Xu Z, Qin J, Shi Y, et al. Development of a tongue image-based machine learning tool for the diagnosis of gastric cancer: a prospective multicentre clinical cohort study. eClinicalMedicine. 2023;57.10.1016/j.eclinm.2023.101834

.4 Yang J, Soltan AAS, Eyre DW, Yang Y, Clifton DA. An adversarial training framework for mitigating algorithmic biases in clinical machine learning. npj Digital Medicine. 2023;6(1).10.1038/s41746-023-00805-y

.5 Yalçın N, Kaşıkcı M, Çelik HT, Demirkan K, Yiğit Ş, Yurdakök M. Development and validation of machine learning-based clinical decision support tool for identifying malnutrition in NICU patients. Scientific Reports. 2023;13(1).10.1038/s41598-023-32570-z

.6 Xu Z, Xu J, Shi C, Xu W, Jin X, Han W, et al. Artificial Intelligence for Anterior Segment Diseases: A Review of Potential Developments and Clinical Applications. Ophthalmology and Therapy. 2023;12(3):1439-55.10.1007/s40123-023-00690-4

.7 Wong ECL, Dulai PS, Narula N. Correspondence on "PICaSSO Histologic Remission Index (PHRI) in ulcerative colitis: development of a novel simplified histological score for monitoring mucosal healing and predicting clinical outcomes and its applicability in an artificial intelligence system" by Gui et al. Gut. 2023;72(4):805-7.10.1136/gutjnl-2022-327661

.8 Wang H, Meng X, Tang Q, Hao Y, Luo Y, Li J. Development and Application of a Standardized Testset for an Artificial Intelligence Medical Device Intended for the Computer-Aided Diagnosis of Diabetic Retinopathy. Journal of Healthcare Engineering. 2023;2023.10.1155/2023/7139560

.9 Trang NTH, Long KQ, An PL, Dang TN. Development of an Artificial Intelligence-Based Breast Cancer Detection Model by Combining Mammograms and Medical Health Records. Diagnostics. 2023;13(3).10.3390/diagnostics13030346

.10 Tanya SM, Nguyen AX, Buchanan S, Jackman CS. Development of a Cloud-Based Clinical Decision Support System for Ophthalmology Triage Using Decision Tree Artificial Intelligence. Ophthalmology Science. 2023;3(1).10.1016/j.xops.2022.100231
.11 Suyama S, Kato S, Nakaura T, Azuma M, Kodama S, Nakayama N, et al. Machine learning to predict left ventricular reverse remodeling by guideline-directed medical therapy by utilizing texture feature of extracellular volume fraction in patients with non-ischemic dilated cardiomyopathy. Heart and Vessels. 2023;38(3):361-70.10.1007/s00380-022-02167-z
.12 Ranchon F, Chanoine S, Lambert-Lacroix S, Bosson JL, Moreau-Gaudry A, Bedouch P. Development of artificial intelligence powered apps and tools for clinical pharmacy services: A systematic review. International Journal of Medical Informatics. 2023;172.10.1016/j.ijmedinf.2022.104983
.13 Pham K, Ray AW, Fernstrum AJ, Alfahmy A, Ray S, Hijaz AK, et al. Development of a machine learning-based predictive model for prediction of success or failure of medical management for benign prostatic hyperplasia. Neurourology and Urodynamics. 2023;42(4):707-17.10.1002/nau.25162
.14 Peper ES, Bastiaansen JAM. Editorial for “Development and Validation of a Combined MRI Radiomics, Imaging and Clinical Parameter Based Machine Learning Model for Identifying Idiopathic Central Precocious Puberty in Girls”. Journal of Magnetic Resonance Imaging. 2023.10.1002/jmri.28728
.15 Parasa S, Repici A, Berzin T, Leggett C, Gross SA, Sharma P. Framework and metrics for the clinical use and implementation of artificial intelligence algorithms into endoscopy practice: recommendations from the American Society for Gastrointestinal Endoscopy Artificial Intelligence Task Force. Gastrointestinal Endoscopy. 2023;97(5):815-24.e1.10.1016/j.gie.2022.10.016
.16 Mencattini A, Di Giuseppe D, Casti P, D’Orazio M, Filippi J, Comes MC, et al., editors. Integrating Machine Learning and Sensors for the Development of Organ-on-Chip Platforms for Medical Diagnosis. Lecture Notes in Electrical Engineering; 2023.
.17 McKee M, Wouters OJ. The Challenges of Regulating Artificial Intelligence in Healthcare Comment on “Clinical Decision Support and New Regulatory Frameworks for Medical Devices: Are We Ready for It?-A Viewpoint Paper”. International Journal of Health Policy and Management. 2023;12(1).10.34172/ijhpm.2022.7261
.18 Li HY, Dong L, Zhou WD, Wu HT, Zhang RH, Li YT, et al. Development and validation of medical record-based logistic regression and machine learning models to diagnose diabetic retinopathy. Graefe's Archive for Clinical and Experimental Ophthalmology. 2023;261(3):681-9.10.1007/s00417-022-05854-9
.19 Kim MS, Ryu JM, Choi BK. Development and Effectiveness of a Clinical Decision Support System for Pressure Ulcer Prevention Care Using Machine Learning: A Quasi-experimental Study. CIN - Computers Informatics Nursing. 2023;41(4):236-45.10.1097/CIN.0000000000000899
.20 Khan WU, Seto E. A “Do No Harm” Novel Safety Checklist and Research Approach to Determine Whether to Launch an Artificial Intelligence–Based Medical Technology: Introducing the Biological-Psychological, Economic, and Social (BPES) Framework. Journal of Medical Internet Research. 2023;25.10.2196/43386
.21 Ishii E, Nawa N, Hashimoto S, Shigemitsu H, Fujiwara T. Development, validation, and feature extraction of a deep learning model predicting in-hospital mortality using Japan's largest national ICU database: a validation framework for transparent clinical Artificial Intelligence (cAI) development. Anaesthesia Critical Care and Pain Medicine. 2023;42(2).10.1016/j.accpm.2022.101167

.22 Iacucci M, Parigi TL, Bazarova A, Ghosh S, Villanacci V, Gui X. Response to: Correspondence on "PICaSSO Histologic Remission Index (PHRI) in ulcerative colitis: development of a novel simplified histological score for monitoring mucosal healing and predicting clinical outcomes and its applicability in an artificial intelligence system" by Wong et al. Gut. 2023;72(4):807-8.10.1136/gutjnl-2022-327980
.23 Huang RH, Hong YK, Du H, Ke WQ, Lin BB, Li YL. A machine learning framework develops a DNA replication stress model for predicting clinical outcomes and therapeutic vulnerability in primary prostate cancer. Journal of Translational Medicine. 2023;21(1).10.1186/s12967-023-03872-7
.24 Hu W, Zhang X, Saber A, Cai Q, Wei M, Wang M, et al. Development and validation of a nomogram model for lung cancer based on radiomics artificial intelligence score and clinical blood test data. Frontiers in Oncology. 2023;13.10.3389/fonc.2023.1132514
.25 Hawken S, Ducharme R, Murphy MSQ, Olibris B, Bota AB, Wilson LA, et al. Development and external validation of machine learning algorithms for postnatal gestational age estimation using clinical data and metabolomic markers. PLoS ONE. 2023;18(3 March).10.1371/journal.pone.0281074
.26 Guan J, Leung E, Kwok KO, Chen FY. Correction: A hybrid machine learning framework to improve prediction of all-cause rehospitalization among eldely patients in Hong Kong (BMC Medical Research Methodology, (2023), 23, 1, (14), 10.1186/s12874-022-01824-1). BMC Medical Research Methodology. 2023;23(1).10.1186/s12874-023-01851-6
.27 Eleftheriadis V, Savvidis G, Paneta V, Chatzipapas K, Kagadis GC, Papadimitroulas P. A framework for prediction of personalized pediatric nuclear medical dosimetry based on machine learning and Monte Carlo techniques. Physics in Medicine and Biology. 2023;68(8).10.1088/1361-6560/acc4a5
.28 Chou YT, Lin CT, Chang TA, Wu YL, Yu CE, Ho TY, et al. Development of artificial intelligence-based clinical decision support system for diagnosis of meniscal injury using magnetic resonance images. Biomedical Signal Processing and Control. 2023;82.10.1016/j.bspc.2022.104523
.29 Blagec K, Kraiger J, Frühwirt W, Samwald M. Benchmark datasets driving artificial intelligence development fail to capture the needs of medical professionals. Journal of Biomedical Informatics. 2023;137.10.1016/j.jbi.2022.104274
.30 Alshammari BM. A framework for developing secure internet of medical things: a comprehensive roadmap from an artificial intelligence perspective. Journal of Theoretical and Applied Information Technology. 2023;101(4):1455-68
.31 Zhang Q, Huang A, Shao L, Wu P, Heidari AA, Cai Z, et al. A machine learning framework for identifying influenza pneumonia from bacterial pneumonia for medical decision making. Journal of Computational Science. 2022;65.10.1016/j.jocs.2022.101871
.32 Zhang J, Whebell S, Gallifant J, Budhdeo S, Mattie H, Lertvittayakumjorn P, et al. An interactive dashboard to track themes, development maturity, and global equity in clinical artificial intelligence research. The Lancet Digital Health. 2022;4(4):e212-e3.10.1016/S2589-7500(22)00032-2
.33 Zhang H, Chen H, Zhang C, Cao A, Yu Z, Wu H, et al. Development and validation of comprehensive clinical outcome prediction models for acute ischaemic stroke in anterior circulation based on machine learning. Journal of Clinical Neuroscience. 2022;104:1-9.10.1016/j.jocn.2022.07.022
.34 Zaylaa AJ, Makki M, Kassem R, editors. Thalassemia Diagnosis Through Medical Imaging: A New Artificial Intelligence-Based Framework. 2022 International Conference on Smart Systems and Power Management, IC2SPM 2022; 2022.
.35 Yuan H, Xie F, Ong MEH, Ning Y, Chee ML, Saffari SE, et al. AutoScore-Imbalance: An interpretable machine learning tool for development of clinical scores with rare events data. Journal of Biomedical Informatics. 2022;129.10.1016/j.jbi.2022.104072

.36 Yin T, Zheng H, Ma T, Tian X, Xu J, Li Y, et al. Predicting acupuncture efficacy for functional dyspepsia based on routine clinical features: a machine learning study in the framework of predictive, preventive, and personalized medicine. EPMA Journal. 2022;13(1):137-47.10.1007/s13167-022-00271-8
.37 Yang L, Peavey M, Kaskar K, Chappell N, Zhu L, Devlin D, et al. Development of a dynamic machine learning algorithm to predict clinical pregnancy and live birth rate with embryo morphokinetics. F and S Reports. 2022;3(2):116-23.10.1016/j.xfre.2022.04.004
.38 Yang J, Luo B, Zhao C, Zhang H. Artificial intelligence healthcare service resources adoption by medical institutions based on TOE framework. Digital Health. 2022;8.10.1177/20552076221126034
.39 Yagi M, Michikawa T, Yamamoto T, Iga T, Ogura Y, Tachibana A, et al. Development and validation of machine learning-based predictive model for clinical outcome of decompression surgery for lumbar spinal canal stenosis. Spine Journal. 2022;22(11):1768-77.10.1016/j.spinee.2022.06.008
.40 Xiao Y. Application of Neural Network Algorithm in Medical Artificial Intelligence Product Development. Computational and mathematical methods in medicine. 2022;2022.10.1155/2022/5413202
.41 Wong ANN, He Z, Leung KL, To CCK, Wong CY, Wong SCC, et al. Current Developments of Artificial Intelligence in Digital Pathology and Its Future Clinical Applications in Gastrointestinal Cancers. Cancers. 2022;14(15).10.3390/cancers14153780
.42 Wang X, Gao M, Xie J, Deng Y, Tu W, Yang H, et al. Development, Validation, and Comparison of Image-Based, Clinical Feature-Based and Fusion Artificial Intelligence Diagnostic Models in Differentiating Benign and Malignant Pulmonary Ground-Glass Nodules. Frontiers in Oncology. 2022;12.10.3389/fonc.2022.892890
.43 Walston SL, Matsumoto T, Miki Y, Ueda D. Artificial intelligence-based model for COVID-19 prognosis incorporating chest radiographs and clinical data; a retrospective model development and validation study. British Journal of Radiology. 2022;95(1140).10.1259/bjr.20220058
.44 Vasey B, Nagendran M, Campbell B, Clifton DA, Collins GS, Denaxas S, et al. Reporting guideline for the early-stage clinical evaluation of decision support systems driven by artificial intelligence: DECIDE-AI. Nature Medicine. 2022;28(5):924-33.10.1038/s41591-022-01772-9
.45 Vasey B, Nagendran M, Campbell B, Clifton DA, Collins GS, Denaxas S, et al. Publisher Correction: Reporting guideline for the early-stage clinical evaluation of decision support systems driven by artificial intelligence: DECIDE-AI (Nature Medicine, (2022), 28, 5, (924-933), 10.1038/s41591-022-01772-9). Nature Medicine. 2022.10.1038/s41591-022-01951-8
.46 Vasey B, Nagendran M, Campbell B, Clifton DA, Collins GS, Denaxas S, et al. Reporting guideline for the early stage clinical evaluation of decision support systems driven by artificial intelligence: DECIDE-AI. The BMJ. 2022.10.1136/bmj-2022-070904
.47 Tulk Jesso S, Kelliher A, Sanghavi H, Martin T, Henrickson Parker S. Inclusion of Clinicians in the Development and Evaluation of Clinical Artificial Intelligence Tools: A Systematic Literature Review. Frontiers in Psychology. 2022;13.10.3389/fpsyg.2022.830345
.48 Tian X, Tang H, Cheng L, Liao Z, Li Y, He J, et al., editors. Evaluation System Framework of Artificial Intelligence Applications in Medical Diagnosis and Treatment. Procedia Computer Science; 2022.
.49 Takahashi T, Nakagami G, Murayama R, Abe-Doi M, Matsumoto M, Sanada H. Automatic vein measurement by ultrasonography to prevent peripheral intravenous catheter failure for clinical practice using artificial intelligence: development and evaluation study of an automatic detection method based on deep learning. BMJ open. 2022;12(5).10.1136/bmjopen-2021-051466

.50 Singer SJ, Kellogg KC, Galper AB, Viola D. Enhancing the value to users of machine learning-based clinical decision support tools: A framework for iterative, collaborative development and implementation. Health Care Management Review. 2022;47(2):E21-E31.10.1097/HMR.0000000000000324
.51 Shim S, Yu JY, Jekal S, Song YJ, Moon KT, Lee JH, et al. Development and validation of interpretable machine learning models for inpatient fall events and electronic medical record integration. Clinical and Experimental Emergency Medicine. 2022;9(4):345-53.10.15441/ceem.22.354
.52 Sharma A, Virmani T, Pathak V, Sharma A, Pathak K, Kumar G, et al. Artificial Intelligence-Based Data-Driven Strategy to Accelerate Research, Development, and Clinical Trials of COVID Vaccine. BioMed research international. 2022;2022.10.1155/2022/7205241
.53 Schrempf M, Polat Erdeniz S, Kramer D, Jauk S, Veeranki SPK, Ribitsch W, et al., editors. Development of an Architecture to Implement Machine Learning Based Risk Prediction in Clinical Routine: A Service-Oriented Approach. Studies in health technology and informatics; 2022.
.54 Schaye V, Guzman B, Burk-Rafel J, Marin M, Reinstein I, Kudlowitz D, et al. Development and Validation of a Machine Learning Model for Automated Assessment of Resident Clinical Reasoning Documentation. Journal of General Internal Medicine. 2022;37(9):2230-8.10.1007/s11606-022-07526-0
.55 Sato H, editor Development of Clinical Pharmaceutical Services via Artificial Intelligence Adaptation. Yakugaku Zasshi; 2022.
.56 Sammer MBK, Sher AC, Towbin AJ. Ensuring Adequate Development and Appropriate Use of Artificial Intelligence in Pediatric Medical Imaging. American Journal of Roentgenology. 2022;218(1):182-3.10.2214/AJR.21.26339
.57 Sadhu PK, Baul A, Yanambaka VP, Abdelgawad A, editors. Machine Learning and PUF based Authentication Framework for Internet of Medical Things. 2022 International Conference on Microelectronics, ICM 2022; 2022.
.58 Saab A, Abi Khalil C, Jammal M, Saikali M, Lamy JB. Early Prediction of All-Cause Clinical Deterioration in General Wards Patients: Development and Validation of a Biomarker-Based Machine Learning Model Derived from Rapid Response Team Activations. Journal of Patient Safety. 2022;18(6):578-86.10.1097/PTS.0000000000001069
.59 Ruzicka D, Kondo T, Fujimoto G, Craig AP, Kim SW, Mikamo H. Development of a clinical prediction model for recurrence and mortality outcomes after Clostridioides difficile infection using a machine learning approach. Anaerobe. 2022;77.10.1016/j.anaerobe.2022.102628
.60 Rossi JG, Feldberg B, Krois J, Schwendicke F. Evaluation of the Clinical, Technical, and Financial Aspects of Cost-Effectiveness Analysis of Artificial Intelligence in Medicine: Scoping Review and Framework of Analysis. JMIR Medical Informatics. 2022;10(8).10.2196/33703
.61 Renna F, Martins M, Neto A, Cunha A, Libânio D, Dinis-Ribeiro M, et al. Artificial Intelligence for Upper Gastrointestinal Endoscopy: A Roadmap from Technology Development to Clinical Practice. Diagnostics. 2022;12(5).10.3390/diagnostics12051278
.62 Po-Yen Lin F, Salih OSM, Scott N, Jameson MB, Epstein RJ. Development and Validation of a Machine Learning Approach Leveraging Real-World Clinical Narratives as a Predictor of Survival in Advanced Cancer. JCO clinical cancer informatics. 2022;6:e2200064.10.1200/CCI.22.00064
.63 Peng L, Zeng H, editors. Research and development of the clinical thinking mining and discovery system based on artificial intelligence. Proceedings of SPIE - The International Society for Optical Engineering; 2022.

.64 Parrott N, Manevski N, Olivares-Morales A. Can We Predict Clinical Pharmacokinetics of Highly Lipophilic Compounds by Integration of Machine Learning or in Vitro Data into Physiologically Based Models? A Feasibility Study Based on 12 Development Compounds. Molecular Pharmaceutics. 2022;19(11):3858-68.10.1021/acs.molpharmaceut.2c00350
.65 Park SB, Yoo C. Development of a graphical model of causal gene regulatory networks using medical big data and Bayesian machine learning. Journal of the Korean Medical Association. 2022;65(3):167-72.10.5124/jkma.2022.65.3.167
.66 Oosterhoff JHF, Savelberg ABMC, Karhade AV, Gravesteijn BY, Doornberg JN, Schwab JH, et al. Development and internal validation of a clinical prediction model using machine learning algorithms for 90 day and 2 year mortality in femoral neck fracture patients aged 65 years or above. European Journal of Trauma and Emergency Surgery. 2022;48(6):4669-82.10.1007/s00068-022-01981-4
.67 Niiya A, Murakami K, Kobayashi R, Sekimoto A, Saeki M, Toyofuku K, et al. Development of an artificial intelligence-assisted computed tomography diagnosis technology for rib fracture and evaluation of its clinical usefulness. Scientific Reports. 2022;12(1).10.1038/s41598-022-12453-5
.68 McLaughlin M, Pellé KG, Scarpino SV, Giwa A, Mount-Finette E, Haidar N, et al. Development and Validation of Manually Modified and Supervised Machine Learning Clinical Assessment Algorithms for Malaria in Nigerian Children. Frontiers in Artificial Intelligence. 2022;4.10.3389/frai.2021.554017
.69 McCradden MD, Anderson JA, A. Stephenson E, Drysdale E, Erdman L, Goldenberg A, et al. A Research Ethics Framework for the Clinical Translation of Healthcare Machine Learning. American Journal of Bioethics. 2022;22(5):8-22.10.1080/15265161.2021.2013977
.70 Lv H, Li M, Wang Z, Yang D, Xu H, Li J, et al. Clinical practice guideline for body composition assessment based on upper abdominal magnetic resonance images annotated using artificial intelligence. Chinese Medical Journal. 2022;135(6):631-3.10.1097/CM9.0000000000002002
.71 Liu N, Xie F, Siddiqui FJ, Wah Ho AF, Chakraborty B, Nadarajan GD, et al. Leveraging Large-Scale Electronic Health Records and Interpretable Machine Learning for Clinical Decision Making at the Emergency Department: Protocol for System Development and Validation. JMIR Research Protocols. 2022;11(3).10.2196/34201
.72 Kwon O, Na W, Kang H, Jun TJ, Kweon J, Park GM, et al. Electronic Medical Record–Based Machine Learning Approach to Predict the Risk of 30-Day Adverse Cardiac Events after Invasive Coronary Treatment: Machine Learning Model Development and Validation. JMIR Medical Informatics. 2022;10(5).10.2196/26801
.73 Kumar V, Allen C, Overman S, Teredesai A, Simovitch R, Flurin PH, et al. Development of a predictive model for a machine learning–derived shoulder arthroplasty clinical outcome score. Seminars in Arthroplasty JSES. 2022;32(2):226-37.10.1053/j.sart.2021.09.005
.74 Kim K, Lee MK, Shin HK, Lee H, Kim B, Kang S. Development and application of survey-based artificial intelligence for clinical decision support in managing infectious diseases: A pilot study on a hospital in central Vietnam. Frontiers in Public Health. 2022;10.10.3389/fpubh.2022.1023098
.75 Kim B, Lee E, editors. Medical artificial intelligence framework for the development of medical imaging artificial intelligence devices. International Conference on ICT Convergence; 2022.
.76 Kanbar LJ, Wissel B, Ni Y, Pajor N, Glauser T, Pestian J, et al. Implementation of Machine Learning Pipelines for Clinical Practice: Development and Validation Study. JMIR Medical Informatics. 2022;10(12).10.2196/37833

.77 Huynh QTV, Le NQK, Huang SY, Ho BT, Vu TH, Pham HTM, et al. Development and Validation of Clinical Diagnostic Model for Girls with Central Precocious Puberty: Machine-learning Approaches. PLoS ONE. 2022;17(1 January).10.1371/journal.pone.0261965
.78 Hu D, Li S, Zhang H, Wu N, Lu X. Using Natural Language Processing and Machine Learning to Preoperatively Predict Lymph Node Metastasis for Non-Small Cell Lung Cancer With Electronic Medical Records: Development and Validation Study. JMIR Medical Informatics. 2022;10(4).10.2196/35475
.79 Houssein EH, Saber E, Wazery YM, Ali AA. Swarm Intelligence Algorithms-Based Machine Learning Framework for Medical Diagnosis: A Comprehensive Review. Studies in Computational Intelligence. 10382022. p. 85-106.
.80 Hindocha S, Charlton TG, Linton-Reid K, Hunter B, Chan C, Ahmed M, et al. A comparison of machine learning methods for predicting recurrence and death after curative-intent radiotherapy for non-small cell lung cancer: Development and validation of multivariable clinical prediction models. eBioMedicine. 2022;77.10.1016/j.ebiom.2022.103911
.81 Hemdan EED, El-Shafai W, Sayed A. CR19: a framework for preliminary detection of COVID-19 in cough audio signals using machine learning algorithms for automated medical diagnosis applications. Journal of Ambient Intelligence and Humanized Computing. 2022.10.1007/s12652-022-03732-0
.82 Hassija V, Ratnakumar R, Chamola V, Agarwal S, Mehra A, Kanhere SS, et al. A machine learning and blockchain based secure and cost-effective framework for minor medical consultations. Sustainable Computing: Informatics and Systems. 2022;35.10.1016/j.suscom.2021.100651
.83 Gui X, Bazarova A, Del Amor R, Vieth M, De Hertogh G, Villanacci V, et al. PICaSSO Histologic Remission Index (PHRI) in ulcerative colitis: development of a novel simplified histological score for monitoring mucosal healing and predicting clinical outcomes and its applicability in an artificial intelligence system. Gut. 2022.10.1136/gutjnl-2021-326376
.84 Ghazi L, Ahmad T, Wilson FP. A Clinical Framework for Evaluating Machine Learning Studies. JACC: Heart Failure. 2022;10(9):648-50.10.1016/j.jchf.2022.07.002
.85 Farrow L, Ashcroft GP, Zhong M, Anderson L. Using Artificial Intelligence to Revolutionise the Patient Care Pathway in Hip and Knee Arthroplasty (ARCHERY): Protocol for the Development of a Clinical Prediction Model. JMIR Research Protocols. 2022;11(5).10.2196/37092
.86 Elezaby MA. Impact of a Deep Learning Model for Predicting Mammographic Breast Density in Routine Clinical Practice: A Methodologic Framework for Clinical Testing of Artificial Intelligence Tools. Journal of the American College of Radiology. 2022;19(9):1031-3.10.1016/j.jacr.2022.05.013
.87 Dosanjh U. ARTIFICIAL INTELLIGENCE Modernizing Your Clinical Development Safety Practices With Artificial Intelligence. Drug Development and Delivery. 2022;22(4):24-7
.88 Devi Satya Sri V, Vemuru S. A filter-based machine learning classification framework for cloud-based medical databases. International Journal of Ad Hoc and Ubiquitous Computing. 2022;40(1-3):94-105.10.1504/IJAHUC.2022.123531
.89 Deshpande NM, Gite S, Pradhan B, Assiri ME. Explainable Artificial Intelligence–A New Step towards the Trust in Medical Diagnosis with AI Frameworks: A Review. CMES - Computer Modeling in Engineering and Sciences. 2022;133(3):843-72.10.32604/cmes.2022.021225
.90 Czere JT, Gulacsi L, Zrubka Z, Pentek M, editors. Quality assessment of clinical trials with artificial intelligence based chatbots in healthcare: points to consider in the protocol development for a systematic literature review. SACI 2022 - IEEE 16th International Symposium on Applied Computational Intelligence and Informatics, Proceedings; 2022.

.91 Coombs L, Orlando A, Wang X, Shaw P, Rich AS, Lakhtakia S, et al. A machine learning framework supporting prospective clinical decisions applied to risk prediction in oncology. npj Digital Medicine. 2022;5(1).10.1038/s41746-022-00660-3
.92 Convertino VA, Techentin RW, Poole RJ, Dacy AC, Carlson AN, Cardin S, et al. AI-Enabled Advanced Development for Assessing Low Circulating Blood Volume for Emergency Medical Care: Comparison of Compensatory Reserve Machine-Learning Algorithms. Sensors. 2022;22(7).10.3390/s22072642
.93 Choudhury A. Toward an Ecologically Valid Conceptual Framework for the Use of Artificial Intelligence in Clinical Settings: Need for Systems Thinking, Accountability, Decision-making, Trust, and Patient Safety Considerations in Safeguarding the Technology and Clinicians. JMIR Human Factors. 2022;9(2).10.2196/35421
.94 Chin KC, Cheng YC, Sun JT, Ou CY, Hu CH, Tsai MC, et al. Machine Learning–Based Text Analysis to Predict Severely Injured Patients in Emergency Medical Dispatch: Model Development and Validation. Journal of Medical Internet Research. 2022;24(6).10.2196/30210
.95 Birnbaum ML, Abrami A, Heisig S, Ali A, Arenare E, Agurto C, et al. Acoustic and Facial Features from Clinical Interviews for Machine Learning-Based Psychiatric Diagnosis: Algorithm Development. JMIR Mental Health. 2022;9(1).10.2196/24699
.96 Beram SM, Pallathadka H, Patra I, Prabhu P, editors. A Machine Learning Based Framework for Pre-processing and Classification of Medical Images. ECS Transactions; 2022.
.97 Anand L, Rane KP, Bewoor LA, Bangare JL, Surve J, Raghunath MP, et al. Development of Machine Learning and Medical Enabled Multimodal for Segmentation and Classification of Brain Tumor Using MRI Images. Computational Intelligence and Neuroscience. 2022;2022.10.1155/2022/7797094
.98 Alzahrani AA, Bataineh B, Alshammari HH, Kabrah S, Baghdadi M, editors. A New Machine Learning Framework for Detecting COVID-19 From Clinical Data on Lung And Heart Function. Proceedings of 2022 5th National Conference of Saudi Computers Colleges, NCCC 2022; 2022.
.99 Alqaysi ME, Albahri AS, Hamid RA. Hybrid Diagnosis Models for Autism Patients Based on Medical and Sociodemographic Features Using Machine Learning and Multicriteria Decision-Making (MCDM) Techniques: An Evaluation and Benchmarking Framework. Computational and mathematical methods in medicine. 2022;2022.10.1155/2022/9410222
.100 Al-Zubaidy M, Hogg HJ, Maniatopoulos G, Talks J, Teare MD, Keane PA, et al. Stakeholder Perspectives on Clinical Decision Support Tools to Inform Clinical Artificial Intelligence Implementation: Protocol for a Framework Synthesis for Qualitative Evidence. JMIR Research Protocols. 2022;11(4).10.2196/33145
.101 Aboian M, Bousabarah K, Kazarian E, Zeevi T, Holler W, Merkaj S, et al. Clinical implementation of artificial intelligence in neuroradiology with development of a novel workflow-efficient picture archiving and communication system-based automated brain tumor segmentation and radiomic feature extraction. Frontiers in neuroscience. 2022;16.10.3389/fnins.2022.860208
.102 Abiodun TN, Okunbor D, Osamor VC. Remote Health Monitoring in Clinical Trial using Machine Learning Techniques: A Conceptual Framework. Health and Technology. 2022;12(2):359-64.10.1007/s12553-022-00652-z
.103 Ziang Z, Jihaeng L, editors. Research on development and challenges of chinese medical artificial intelligence. Proceedings - 2021 International Conference on Public Management and Intelligent Society, PMIS 2021; 2021.

.104 Zhong T, Zhuang Z, Dong X, Wong KH, Wong WT, Wang J, et al. Erratum: Predicting antituberculosis drug-induced liver injury using an interpretable machine learning method: Model development and validation study (JMIR Medical Informatics (2021) 9:7 (e29226) DOI: 10.2196/29226). JMIR Medical Informatics. 2021;9(8).10.2196/32415
.105 Yu CS, Chang SS, Chang TH, Wu JL, Lin YJ, Chien HF, et al. Erratum: A COVID-19 pandemic artificial intelligence-based system with deep learning forecasting and automatic statistical data acquisition: Development and implementation study (Journal of Medical Internet Research (2021) 23:5 (e27806) DOI: 10.2196/27806). Journal of Medical Internet Research. 2021;23(7).10.2196/31085
.106 Yang WYO, Lai CC, Tsou MT, Hwang LC. Development of machine learning models for prediction of osteoporosis from clinical health examination data. International journal of environmental research and public health. 2021;18(14).10.3390/ijerph18147635
.107 Yang L, Zheng S, Xu X, Sun Y, Wang X, Li J. Medical Data Mining Course Development in Postgraduate Medical Education:Web-Based Survey and Case Study. JMIR Medical Education. 2021;7(4).10.2196/24027
.108 Yan K, Ji Z, Jin Q, Wang QG. Guest Editorial: Machine Learning for AI-Enhanced Healthcare and Medical Services: New Development and Promising Solution. IEEE/ACM Transactions on Computational Biology and Bioinformatics. 2021;18(3):850-1.10.1109/TCBB.2021.3050935
.109 Vasey B, Clifton DA, Collins GS, Denniston AK, Faes L, Geerts BF, et al. DECIDE-AI: new reporting guidelines to bridge the development-to-implementation gap in clinical artificial intelligence. Nature Medicine. 2021;27(2):186-7.10.1038/s41591-021-01229-5
.110 Unger M, editor Data acquisition and the implications of machine learning in the development of a Clinical Decision Support system. Proceedings - 2021 IEEE/ACM 1st Workshop on AI Engineering - Software Engineering for AI, WAIN 2021; 2021.
.111 Tian M, Wang T, Wang P. Development and Clinical Validation of a Seven-Gene Prognostic Signature Based on Multiple Machine Learning Algorithms in Kidney Cancer. Cell Transplantation. 2021;30.10.1177/0963689720969176
.112 Taylor JC, Sharkey MJ, Metherall P. In-house development, implementation and evaluation of machine learning software for automated clinical scan processing. Nuclear Medicine Communications. 2021:1157-61.10.1097/MNM.0000000000001436
.113 Takata A, Hamanaka K, Matsumoto N. Refinement of the clinical variant interpretation framework by statistical evidence and machine learning. Med. 2021;2(5):611-32.e9.10.1016/j.medj.2021.02.003
.114 Sverdlov O, Ryeznik Y, Wong WK. Opportunity for efficiency in clinical development: An overview of adaptive clinical trial designs and innovative machine learning tools, with examples from the cardiovascular field. Contemporary Clinical Trials. 2021;105.10.1016/j.cct.2021.106397
.115 Soong TK, Ho CM. Artificial intelligence in medical OSCEs: Reflections and future developments. Advances in Medical Education and Practice. 2021;12:167-73.10.2147/AMEP.S287926
.116 Soltan AAS, Kouchaki S, Zhu T, Kiyasseh D, Taylor T, Hussain ZB, et al. Rapid triage for COVID-19 using routine clinical data for patients attending hospital: development and prospective validation of an artificial intelligence screening test. The Lancet Digital Health. 2021;3(2):e78-e87.10.1016/S2589-7500(20)30274-0
.117 Siontis GCM, Sweda R, Noseworthy PA, Friedman PA, Siontis KC, Patel CJ. Development and validation pathways of artificial intelligence tools evaluated in randomised clinical trials. BMJ Health and Care Informatics. 2021;28(1).10.1136/bmjhci-2021-100466

.118 Shelmerdine SC, Arthurs OJ, Denniston A, Sebire NJ. Review of study reporting guidelines for clinical studies using artificial intelligence in healthcare. BMJ Health and Care Informatics. 2021;28(1).10.1136/bmjhci-2021-100385
.119 Schweitzer GM, Bitzer M, Vielhaber M, editors. Artificial intelligence in engineering: Evolution of virtual product development in the context of medical device industry. Procedia CIRP; 2021.
.120 Sangeetha SKB, Dhaya R, Shah DT, Dharanidharan R, Reddy KPS, editors. An empirical analysis of machine learning frameworks for digital pathology in medical science. Journal of Physics: Conference Series; 2021.
.121 Quiroz JC, Feng YZ, Cheng ZY, Rezazadegan D, Chen PK, Lin QT, et al. Development and validation of a machine learning approach for automated severity assessment of COVID-19 based on clinical and imaging data: Retrospective study. JMIR Medical Informatics. 2021;9(2).10.2196/24572
.122 Pournara E, Kormaksson M, Nash P, Ritchlin CT, Kirkham BW, Ligozio G, et al. Clinically relevant patient clusters identified by machine learning from the clinical development programme of secukinumab in psoriatic arthritis. RMD Open. 2021;7(3).10.1136/rmdopen-2021-001845
.123 Ponomarev KY, Zaharov AA, editors. Framework for Processing Medical Data and Secure Machine Learning in Internet of Medical Things. Communications in Computer and Information Science; 2021.
.124 Parums DV. Editorial: Artificial intelligence (ai) in clinical medicine and the 2020 consort-ai study guidelines. Medical Science Monitor. 2021;27.10.12659/MSM.933675
.125 Olczak J, Pavlopoulos J, Prijs J, Ijpma FFA, Doornberg JN, Lundström C, et al. Presenting artificial intelligence, deep learning, and machine learning studies to clinicians and healthcare stakeholders: an introductory reference with a guideline and a Clinical AI Research (CAIR) checklist proposal. Acta Orthopaedica. 2021;92(5):513-25.10.1080/17453674.2021.1918389
.126 Nabozny A, Balcerzak B, Wierzbicki A, Morzy M, Chlabicz M. Active annotation in evaluating the credibility of web-based medical information: Guidelines for creating training data sets for machine learning. JMIR Medical Informatics. 2021;9(11).10.2196/26065
.127 Meti N, Saednia K, Lagree A, Tabbarah S, Mohebpour M, Kiss A, et al. Machine Learning Frameworks to Predict Neoadjuvant Chemotherapy Response in Breast Cancer Using Clinical and Pathological Features. JCO clinical cancer informatics. 2021;5:66-80.10.1200/CCI.20.00078
.128 McGenity C, Treanor D. Guidelines for clinical trials using artificial intelligence – SPIRIT-AI and CONSORT-AI†. Journal of Pathology. 2021;253(1):14-6.10.1002/path.5565
.129 MacKay EJ, Stubna MD. Understanding Basic Concepts of Supervised Machine Learning Model Development in the Clinical Setting. Journal of Cardiothoracic and Vascular Anesthesia. 2021;35(8):2336-7.10.1053/j.jvca.2021.04.010
.130 Liu S. The development trend and challenge of artificial intelligence in medical imaging. Chinese Journal of Radiology (China). 2021;55(7):700-2.10.3760/cma.j.cn112149-20201011-01142
.131 Levy-Loboda T, Rav-Acha M, Katz A, Nissim N. Cardio-ML: Detection of malicious clinical programmings aimed at cardiac implantable electronic devices based on machine learning and a missing values resemblance framework. Artificial Intelligence in Medicine. 2021;122.10.1016/j.artmed.2021.102200
.132 Lee H, Kang J, Yeo J. Medical specialty recommendations by an artificial intelligence chatbot on a smartphone: Development and deployment. Journal of Medical Internet Research. 2021;23(5).10.2196/27460

.133 Karaca O, Çalışkan SA, Demir K. Medical artificial intelligence readiness scale for medical students (MAIRS-MS) – development, validity and reliability study. BMC Medical Education. 2021;21(1).10.1186/s12909-021-02546-6
.134 Julius MS, Alo UR, Onu FU, Akobundu CI, editors. Machine learning framework to predict patient non-adherence to medication using non-clinical data: A prognosis approach. ACM International Conference Proceeding Series; 2021.
.135 Ji M, Liu Y, Hao T. Erratum: Predicting health material accessibility: Development of machine learning algorithms (JMIR Medical Informatics (2021) 9:9 (e29175) DOI: 10.2196/29175). JMIR Medical Informatics. 2021;9(9).10.2196/33385
.136 Ji M, Genchev GZ, Huang H, Xu T, Lu H, Yu G. Evaluation framework for successful artificial intelligence–enabled clinical decision support systems: Mixed methods study. Journal of Medical Internet Research. 2021;23(6).10.2196/25929
.137 Jha AK, Myers KJ, Obuchowski NA, Liu Z, Rahman MA, Saboury B, et al. Objective Task-Based Evaluation of Artificial Intelligence-Based Medical Imaging Methods:: Framework, Strategies, and Role of the Physician. PET clinics. 2021;16(4):493-511.10.1016/j.cpet.2021.06.013
.138 Iskanderani AI, Mehedi IM, Aljohani AJ, Shorfuzzaman M, Akther F, Palaniswamy T, et al. Artificial Intelligence and Medical Internet of Things Framework for Diagnosis of Coronavirus Suspected Cases. Journal of Healthcare Engineering. 2021;2021.10.1155/2021/3277988
.139 Ibrahim H, Liu X, Rivera SC, Moher D, Chan AW, Sydes MR, et al. Reporting guidelines for clinical trials of artificial intelligence interventions: the SPIRIT-AI and CONSORT-AI guidelines. Trials. 2021;22(1).10.1186/s13063-020-04951-6
.140 Hussain M, Hussain J, Ali T, Ali SI, Bilal HSM, Lee S, et al. Text classification in clinical practice guidelines using machine-learning assisted pattern-based approach. Applied Sciences (Switzerland). 2021;11(8).10.3390/app11083296
.141 Howell RS, Liu HH, Khan AA, Woods JS, Lin LJ, Saxena M, et al. Development of a Method for Clinical Evaluation of Artificial Intelligence-Based Digital Wound Assessment Tools. JAMA Network Open. 2021;4(5).10.1001/jamanetworkopen.2021.7234
.142 Haroz EE, Grubin F, Goklish N, Pioche S, Cwik M, Barlow A, et al. Designing a clinical decision support tool that leverages machine learning for suicide risk prediction: Development study in partnership with native american care providers. JMIR Public Health and Surveillance. 2021;7(9).10.2196/24377
.143 Farzaneh N, Williamson CA, Gryak J, Najarian K. A hierarchical expert-guided machine learning framework for clinical decision support systems: an application to traumatic brain injury prognostication. npj Digital Medicine. 2021;4(1).10.1038/s41746-021-00445-0
.144 Domínguez-Olmedo JL, Gragera-Martínez Á, Mata J, Álvarez VP. Machine learning applied to clinical laboratory data in Spain for COVID-19 outcome prediction: Model development and validation. Journal of Medical Internet Research. 2021;23(4).10.2196/26211
.145 Damoah IS, Ayakwah A, Tingbani I. Artificial intelligence (AI)-enhanced medical drones in the healthcare supply chain (HSC) for sustainability development: A case study. Journal of Cleaner Production. 2021;328.10.1016/j.jclepro.2021.129598
.146 Cychnerski J, Dziubich T, editors. Process of Medical Dataset Construction for Machine Learning - Multifield Study and Guidelines. Communications in Computer and Information Science; 2021.

.147 Chen YL, Luo XF, Shi QL, Lyu M, Zhou Q, Wang JJ, et al. How will artificial intelligence lead the future of clinical practice guidelines. Medical Journal of Peking Union Medical College Hospital. 2021;12(1):114-21.10.12290/xhyxzz.2021-0012
.148 Charalambides M, Flohr C, Bahadoran P, Matin RN. New international reporting guidelines for clinical trials evaluating effectiveness of artificial intelligence interventions in dermatology: strengthening the SPIRIT of robust trial reporting. British Journal of Dermatology. 2021;184(3):381-3.10.1111/bjd.19616
.149 Benjamin M, Aisen A, Benjamin E. Accelerating Development and Clinical Deployment of Diagnostic Imaging Artificial Intelligence. Journal of the American College of Radiology. 2021;18(11):1514-6.10.1016/j.jacr.2021.09.022
.150 Beaulieu D, Berry JD, Paganoni S, Glass JD, Fournier C, Cuerdo J, et al. Development and validation of a machine-learning ALS survival model lacking vital capacity (VC-Free) for use in clinical trials during the COVID-19 pandemic. Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration. 2021;22(S1):22-32.10.1080/21678421.2021.1924207
.151 Ba T, Li S, Wei Y. A data-driven machine learning integrated wearable medical sensor framework for elderly care service. Measurement: Journal of the International Measurement Confederation. 2021;167.10.1016/j.measurement.2020.108383
.152 Arima H, Kano S. Integrated Analytical Framework for the Development of Artificial Intelligence-Based Medical Devices. Therapeutic Innovation and Regulatory Science. 2021;55(4):853-65.10.1007/s43441-021-00292-x
.153 Aktar S, Ahamad MM, Rashed-Al-Mahfuz M, Azad AKM, Uddin S, Kamal AHM, et al. Machine learning approach to predicting COVID-19 disease severity based on clinical blood test data: Statistical analysis and model development. JMIR Medical Informatics. 2021;9(4).10.2196/25884
.154 Zhang Y, Ding X, Hu F, editors. Application and Development Prospect of Artificial Intelligence and Big Data in Medical and Health Field. Journal of Physics: Conference Series; 2020.
.155 Yu CS, Lin YJ, Lin CH, Lin SY, Wu JL, Chang SS. Erratum: Development of an online health care assessment for preventive medicine: A machine learning approach (Journal of Medical Internet Research (2020) 22:6 (e18585) DOI: 10.2196/18585). Journal of Medical Internet Research. 2020;22(7).10.2196/21753
.156 Wongvibulsin S, Wu KC, Zeger SL. Improving clinical translation of machine learning approaches through clinician-tailored visual displays of black box algorithms: Development and validation. JMIR Medical Informatics. 2020;8(6).10.2196/15791
.157 Wang Y, Zhang X, Wang T, Xing J, Wu Z, Li W, et al. A machine learning framework for accurately recognizing circular RNAs for clinical decision-supporting. BMC Medical Informatics and Decision Making. 2020;20.10.1186/s12911-020-1117-0
.158 Wang M, editor Application Status and Development Prospect of Artificial Intelligence in Clinical Medicine. Advances in Intelligent Systems and Computing; 2020.
.159 Wainrib G. Artificial intelligence for medical and pharmaceutical research: Can artificial intelligence help in the discovery and development of new drugs? Healthcare and Artificial Intelligence2020. p. 207-13.
.160 Thibeault CM, Thorpe SG, Jalaleddini K, Canac N, Hamilton RB. Design patterns in a machine learning framework for medical diagnostics. International Journal of Computers and their Applications. 2020;27(1):46-54

.161 Smith JA, Abhari RE, Hussain Z, Heneghan C, Collins GS, Carr AJ. Industry ties and evidence in public comments on the FDA framework for modifications to artificial intelligence/machine learning-based medical devices: A cross sectional study. BMJ open. 2020;10(10).10.1136/bmjopen-2020-039969
.162 Silitonga P, Dewi BE, Bustamam A, Siswantining T, editors. Correlation between laboratory characteristics and clinical degree of dengue as an initial stage in a development of machine learning predictor program. AIP Conference Proceedings; 2020.
.163 Rivera SC, Liu X, Chan AW, Denniston AK, Calvert MJ. Guidelines for clinical trial protocols for interventions involving artificial intelligence: The SPIRIT-AI Extension. The BMJ. 2020;370.10.1136/bmj.m3210
.164 Ralbovsky NM, Lednev IK. Towards development of a novel universal medical diagnostic method: Raman spectroscopy and machine learning. Chemical Society Reviews. 2020;49(20):7428-53.10.1039/d0cs01019g
.165 Potapov AA, Pakhomov AA, Grachev VI, editors. Development of Methods for Solving Ill-Posed Inverse Problems in Processing Multidimensional Signals in Problems of Artificial Intelligence, Radiolocation and Medical Diagnostics. Advances in Intelligent Systems and Computing; 2020.
.166 Poly TN, Islam MM, Muhtar MS, Yang HC, Nguyen PA, Li YC. Machine learning approach to reduce alert fatigue using a disease medication–related clinical decision support system: Model development and validation. JMIR Medical Informatics. 2020;8(11).10.2196/19489
.167 Liu X, Rivera SC, Moher D, Calvert MJ, Denniston AK. Reporting guidelines for clinical trial reports for interventions involving artificial intelligence: The CONSORT-AI Extension. The BMJ. 2020;370.10.1136/bmj.m3164
.168 Liu X, Cruz Rivera S, Moher D, Calvert MJ, Denniston AK, Chan AW, et al. Reporting guidelines for clinical trial reports for interventions involving artificial intelligence: the CONSORT-AI extension. Nature Medicine. 2020;26(9):1364-74.10.1038/s41591-020-1034-x
.169 Liu X, Cruz Rivera S, Moher D, Calvert MJ, Denniston AK, Ashrafian H, et al. Reporting guidelines for clinical trial reports for interventions involving artificial intelligence: the CONSORT-AI extension. The Lancet Digital Health. 2020;2(10):e537-e48.10.1016/S2589-7500(20)30218-1
.170 Lin H. Development and application of artificial intelligence methods in biological and medical data. Current Bioinformatics. 2020;15(6):515-6
.171 Li Y, Zhang T, Yang Y, Gao Y. Artificial intelligence-aided decision support in paediatrics clinical diagnosis: development and future prospects. Journal of International Medical Research. 2020;48(9).10.1177/0300060520945141
.172 Leightley D, Pernet D, Velupillai S, Stewart RJ, Mark KM, Opie E, et al. The development of the military service identification tool: Identifying military veterans in a clinical research database using natural language processing and machine learning. JMIR Medical Informatics. 2020;8(5).10.2196/15852
.173 Larson DB, Magnus DC, Lungren MP, Shah NH, Langlotz CP. Ethics of using and sharing clinical imaging data for artificial intelligence: A proposed framework. Radiology. 2020;295(3):675-82.10.1148/radiol.2020192536
.174 Langer T, Favarato M, Giudici R, Bassi G, Garberi R, Villa F, et al. Development of machine learning models to predict RT-PCR results for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in patients with influenza-like symptoms using only basic clinical data. Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 2020;28(1).10.1186/s13049-020-00808-8
.175 Kourou KD, Pezoulas VC, Georga EI, Exarchos T, Papaloukas C, Voulgarelis M, et al. Predicting lymphoma development by exploiting genetic variants and clinical findings in a machine learning-based

methodology with ensemble classifiers in a cohort of Sjögren's syndrome patients. IEEE Open Journal of Engineering in Medicine and Biology. 2020;1:49-56.10.1109/OJEMB.2020.2965191
.176 Jiang X, Coffee M, Bari A, Wang J, Jiang X, Huang J, et al. Towards an artificial intelligence framework for data-driven prediction of coronavirus clinical severity. Computers, Materials and Continua. 2020;63(1):537-51.10.32604/cmc.2020.010691
.177 Islam M, Yang HC, Poly TN, Jack Li YC. Development of an artificial intelligence–based automated recommendation system for clinical laboratory tests: Retrospective analysis of the national health insurance database. JMIR Medical Informatics. 2020;8(11).10.2196/24163
.178 Hong S, Lee S, Lee J, Cha WC, Kim K. Prediction of cardiac arrest in the emergency department based on machine learning and sequential characteristics: Model development and retrospective clinical validation study. JMIR Medical Informatics. 2020;8(8).10.2196/15932
.179 Hampel H, Williams C, Etcheto A, Goodsaid F, Parmentier F, Sallantin J, et al. A precision medicine framework using artificial intelligence for the identification and confirmation of genomic biomarkers of response to an Alzheimer's disease therapy: Analysis of the blarcamesine (ANAVEX2-73) Phase 2a clinical study. Alzheimer's and Dementia: Translational Research and Clinical Interventions. 2020;6(1).10.1002/trc2.12013
.180 Du L. Medical emergency resource allocation model in large-scale emergencies based on artificial intelligence: Algorithm development. JMIR Medical Informatics. 2020;8(6).10.2196/19202
.181 Delmar JA, Wang J, Choi SW, Martins JA, Mikhail JP. Erratum: Machine Learning Enables Accurate Prediction of Asparagine Deamidation Probability and Rate (Molecular Therapy - Methods & Clinical Development (2019) 15 (264–274), (S2329050119301068), (10.1016/j.omtm.2019.09.008)). Molecular Therapy - Methods and Clinical Development. 2020;19:374.10.1016/j.omtm.2020.10.008
.182 Daoud MK, Otair M, editors. The role of artificial intelligence and the internet of things in the development of medical radiology (an experimental study on magnetic resonance imaging). Proceedings - 2020 International Conference on Intelligent Computing and Human-Computer Interaction, ICHCI 2020; 2020.
.183 Cruz Rivera S, Liu X, Chan AW, Denniston AK, Calvert MJ, Darzi A, et al. Guidelines for clinical trial protocols for interventions involving artificial intelligence: the SPIRIT-AI extension. Nature Medicine. 2020;26(9):1351-63.10.1038/s41591-020-1037-7
.184 Cruz Rivera S, Liu X, Chan AW, Denniston AK, Calvert MJ, Ashrafian H, et al. Guidelines for clinical trial protocols for interventions involving artificial intelligence: the SPIRIT-AI extension. The Lancet Digital Health. 2020;2(10):e549-e60.10.1016/S2589-7500(20)30219-3
.185 Choi GH, Yun J, Choi J, Lee D, Shim JH, Lee HC, et al. Development of machine learning-based clinical decision support system for hepatocellular carcinoma. Scientific Reports. 2020;10(1).10.1038/s41598-020-71796-z
.186 Chishti S, Jaggi KR, Saini A, Agarwal G, Ranjan A. Artificial Intelligence-Based Differential Diagnosis: Development and Validation of a Probabilistic Model to Address Lack of Large-Scale Clinical Datasets. Journal of Medical Internet Research. 2020;22(4).10.2196/17550
.187 Chen J, Chokshi S, Hegde R, Gonzalez J, Iturrate E, Aphinyanaphongs Y, et al. Development, Implementation, and Evaluation of a Personalized Machine Learning Algorithm for Clinical Decision Support: Case Study with Shingles Vaccination. Journal of Medical Internet Research. 2020;22(4).10.2196/16848

.188 Chae SH, Kim Y, Lee KS, Park HS. Development and clinical evaluation of a web-based upper limb home rehabilitation system using a smartwatch and machine learning model for chronic stroke survivors: Prospective comparative study. JMIR mHealth and uHealth. 2020;8(7).10.2196/17216
.189 Campbell JP, Lee AY, Abràmoff M, Keane PA, Ting DSW, Lum F, et al. Reporting Guidelines for Artificial Intelligence in Medical Research. Ophthalmology. 2020;127(12):1596-9.10.1016/j.ophtha.2020.09.009
.190 Bilal M, Brown JRG, Berzin TM. Incorporating standardised reporting guidelines in clinical trials of artificial intelligence in gastrointestinal endoscopy. The Lancet Gastroenterology and Hepatology. 2020;5(11):962-4.10.1016/S2468-1253(20)30289-2
.191 Anastasopoulos C, Weikert T, Yang S, Abdulkadir A, Schmülling L, Bühler C, et al. Development and clinical implementation of tailored image analysis tools for COVID-19 in the midst of the pandemic: The synergetic effect of an open, clinically embedded software development platform and machine learning. European Journal of Radiology. 2020;131.10.1016/j.ejrad.2020.109233
.192 Zhukov OB, Scheplev PA, Ignatiev AV. Artificial intelligence in medicine: From hybrid studies and clinical validation to development of application models. Andrologia i Genital'naa Hirurgia. 2019;20(3):15-9.10.17650/2070-9781-2019-20-3-15-19
.193 Xiao Y, Liu S. Collaborations of Industry, Academia, Research and Application Improve the Healthy Development of Medical Imaging Artificial Intelligence Industry in China. Chinese Medical Sciences Journal. 2019;34(2):84-8.10.24920/003619
.194 Walczak S. The role of artificial intelligence in clinical decision support systems and a classification framework. Data Analytics in Medicine: Concepts, Methodologies, Tools, and Applications. 12019. p. 390-408.
.195 Thibeault CM, editor Creational and structural patterns in a flexible machine learning framework for medical ultrasound diagnostics. EPiC Series in Computing; 2019.
.196 Sullivan K, Mamas MA, Van Spall HGC. Machine Learning Could Facilitate Optimal Titration of Guideline-Directed Medical Therapy in Heart Failure. Journal of the American College of Cardiology. 2019;74(10):1424-5.10.1016/j.jacc.2019.06.063
.197 Stevenson CH, Hong SC, Ogbuehi KC. Development of an artificial intelligence system to classify pathology and clinical features on retinal fundus images. Clinical and Experimental Ophthalmology. 2019;47(4):484-9.10.1111/ceo.13433
.198 Stamate D, Kim M, Proitsi P, Westwood S, Baird A, Nevado-Holgado A, et al. A metabolite-based machine learning approach to diagnose Alzheimer-type dementia in blood: Results from the European Medical Information Framework for Alzheimer disease biomarker discovery cohort. Alzheimer's and Dementia: Translational Research and Clinical Interventions. 2019;5:933-8.10.1016/j.trci.2019.11.001
.199 Song CW, Jung H, Chung K. Development of a medical big-data mining process using topic modeling. Cluster Computing. 2019;22:1949-58.10.1007/s10586-017-0942-0
.200 Shorey S, Ang E, Yap J, Ng ED, Lau ST, Chui CK. Erratum: Metadata Correction: A Virtual Counseling Application Using Artificial Intelligence for Communication Skills Training in Nursing Education: Development Study (Journal of medical Internet research (2019) 21 10 (e14658)). Journal of medical Internet research. 2019;21(11):e17064.10.2196/17064
.201 Shieh CJ, Wan GS, Wang W, Luo Y. Evaluation model for the application of artificial intelligence medical assistant system to the development of medical ecology in China. Ekoloji. 2019;28(107):311-6

.202 Shah P, Kendall F, Khozin S, Goosen R, Hu J, Laramie J, et al. Artificial intelligence and machine learning in clinical development: a translational perspective. npj Digital Medicine. 2019;2(1).10.1038/s41746-019-0148-3
.203 Sajid MR, Muhammad N, Zakaria R, editors. Construct Validation in Secondary Data: A Guideline for Medical Data Mining. Journal of Physics: Conference Series; 2019.
.204 Nakata N. Recent technical development of artificial intelligence for diagnostic medical imaging. Japanese Journal of Radiology. 2019.10.1007/s11604-018-0804-6
.205 Monroe WS, Anthony T, Tanik MM, Skidmore FM, editors. Towards a framework for validating machine learning results in medical imaging opening the black box. ACM International Conference Proceeding Series; 2019.
.206 Mishra A, Mohapatro M. An IoT framework for bio-medical sensor data acquisition and machine learning for early detection. International Journal of Advanced Technology and Engineering Exploration. 2019;6(54):112-25.10.19101/IJATEE.2019.650027
.207 Meacham S, Isaac G, Nauck D, Virginas B, editors. Towards Explainable AI: Design and Development for Explanation of Machine Learning Predictions for a Patient Readmittance Medical Application. Advances in Intelligent Systems and Computing; 2019.
.208 Martsenyuk V, Babinets L, Dronyak Y, Paslay O, Veselska O, Warwas K, et al., editors. On development of machine learning models with aim of medical differential diagnostics of the comorbid states. Proceedings of the 2019 10th IEEE International Conference on Intelligent Data Acquisition and Advanced Computing Systems: Technology and Applications, IDAACS 2019; 2019.
.209 Liu X, Rivera SC, Faes L, Ferrante di Ruffano L, Yau C, Keane PA, et al. Author Correction: Reporting guidelines for clinical trials evaluating artificial intelligence interventions are needed (Nature Medicine, (2019), 25, 10, (1467-1468), 10.1038/s41591-019-0603-3). Nature Medicine. 2019;25(12):1948.10.1038/s41591-019-0662-5
.210 Liu X, Rivera SC, Faes L, Di Ruffano LF, Yau C, Keane PA, et al. Reporting guidelines for clinical trials evaluating artificial intelligence interventions are needed. Nature Medicine. 2019;25(10):1467-8.10.1038/s41591-019-0603-3
.211 Jauk S, Kramer D, Stark G, Hasiba K, Leodolter W, Schulz S, et al., editors. Development of a machine learning model predicting an ICU admission for patients with elective surgery and its prospective validation in clinical practice. Studies in health technology and informatics; 2019.
.212 Hu XS, Nascimento TD, Bender MC, Hall T, Petty S, O'Malley S, et al. Feasibility of a real-time clinical augmented reality and artificial intelligence framework for pain detection and localization from the brain. Journal of Medical Internet Research. 2019;21(6).10.2196/13594
.213 Giannini HM, Ginestra JC, Chivers C, Draugelis M, Hanish A, Schweickert WD, et al. A Machine Learning Algorithm to Predict Severe Sepsis and Septic Shock: Development, Implementation, and Impact on Clinical Practice. Critical Care Medicine. 2019;47(11):1485-92.10.1097/CCM.0000000000003891
.214 Diebolt V, Azancot I, Boissel FH, Adenot I, Balague C, Barthélémy P, et al. "Artificial intelligence": Which services, which applications, which results and which development today in clinical research? Which impact on the quality of care? Which recommendations? Therapie. 2019;74(1):155-64.10.1016/j.therap.2018.12.003
.215 Diebolt V, Azancot I, Boissel FH, Adenot I, Balague C, Barthélémy P, et al. "Artificial intelligence": Which services, which applications, which results and which development today in clinical

research? Which impact on the quality of care? Which recommendations? Therapie. 2019;74(1):141-54.10.1016/j.therap.2018.11.006
.216 Changala R, Rajeswara Rao D. Development of predictive model for medical domains to predict chronic diseases (diabetes) using machine learning algorithms and classification technique. ARPN Journal of Engineering and Applied Sciences. 2019;14(6):1202-12
.217 Castellanos-Garzón JA, Costa E, Jaimes S JL, Corchado JM. An evolutionary framework for machine learning applied to medical data. Knowledge-Based Systems. 2019;185.10.1016/j.knosys.2019.104982
.218 Ashokkumar C, Sathiamoorthy S, editors. A Framework for Medical Image Retrieval using Machine Learning and Directional Local Ternary Quantized Extrema Patterns. Proceedings of the 2nd International Conference on Smart Systems and Inventive Technology, ICSSIT 2019; 2019.
.219 Walking the tightrope of artificial intelligence guidelines in clinical practice. The Lancet Digital Health. 2019;1(3):e100.10.1016/S2589-7500(19)30063-9
.220 Application of the care guideline as reporting standard in the journal of medical artificial intelligence. Journal of Medical Artificial Intelligence. 2019;2(December).10.21037/jmai.2019.10.02
.221 Yasnitsky LN, Dumler AA, Cherepanov FM. The capabilities of artificial intelligence to simulate the emergence and development of diseases, optimize prevention and treatment thereof, and identify new medical knowledge. Journal of Pharmaceutical Sciences and Research. 2018;10(9):2192-200
.222 Wang WJ, Su MC, Lee SH, Hung CS, Chen CC, editors. A guideline to determine the training sample size when applying big data mining methods in clinical decision making. Proceedings of 4th IEEE International Conference on Applied System Innovation 2018, ICASI 2018; 2018.
.223 Van Belkum S, Brun N, Cleve S, McGovern P, Lumpkin M, Schaeffer PE, et al. Artificial intelligence in clinical development and regulatory affairs – Preparing for the future. Regulatory Rapporteur. 2018;15(10):17-21
.224 Sträter B. Data processing and artificial intelligence: Importance for the development of drugs and medical devices. Pharmazeutische Industrie. 2018;80(10):1323-5
.225 Sahni N, Simon G, Arora R. Development and Validation of Machine Learning Models for Prediction of 1-Year Mortality Utilizing Electronic Medical Record Data Available at the End of Hospitalization in Multicondition Patients: a Proof-of-Concept Study. Journal of General Internal Medicine. 2018;33(6):921-8.10.1007/s11606-018-4316-y
.226 Ninomiya K, Arimura H, Sasahara M, Hirose T, Ohga S, Umezu Y, et al., editors. Bayesian delineation framework of clinical target volumes for prostate cancer radiotherapy using an anatomical-features-based machine learning technique. Progress in Biomedical Optics and Imaging - Proceedings of SPIE; 2018.
.227 Lin H, Long E, Ding X, Diao H, Chen Z, Liu R, et al. Prediction of myopia development among Chinese school-aged children using refraction data from electronic medical records: A retrospective, multicentre machine learning study. PLoS Medicine. 2018;15(11).10.1371/journal.pmed.1002674
.228 Zheng S, Lu JJ, Ghasemzadeh N, Hayek SS, Quyyumi AA, Wang F. Effective information extraction framework for heterogeneous clinical reports using online machine learning and controlled vocabularies. JMIR Medical Informatics. 2017;5(2).10.2196/medinform.7235
.229 Wong KKL, Wang L, Wang D. Recent developments in machine learning for medical imaging applications. Computerized Medical Imaging and Graphics. 2017;57:1-3.10.1016/j.compmedimag.2017.04.001

.230 Shanghooshabad AM, Abadeh MS. Robust medical data mining using a clustering and swarm-based framework. International Journal of Data Mining and Bioinformatics. 2016;14(1):22-39.10.1504/IJDMB.2016.073342
.231 Lokeswari YV, Jacob SG, editors. A cloud-based data mining framework for improved clinical diagnosis through parallel classification. Proceedings of the 2015 International Conference on Applied and Theoretical Computing and Communication Technology, iCATccT 2015; 2016.
.232 Colubri A, Silver T, Fradet T, Retzepi K, Fry B, Sabeti P. Transforming Clinical Data into Actionable Prognosis Models: Machine-Learning Framework and Field-Deployable App to Predict Outcome of Ebola Patients. PLoS neglected tropical diseases. 2016;10(3).10.1371/journal.pntd.0004549
.233 Mann KS, Kaur N, editors. Cloud-deployable health data mining using secured framework for Clinical decision support system. 2015 International Conference and Workshop on Computing and Communication, IEMCON 2015; 2015.
.234 Jagga Z, Gupta D. Erratum: Machine learning for biomarker identification in cancer research - developments toward its clinical application (Personalized Medicine (2015) 12:4 (371-387)). Personalized Medicine. 2015;12(6):604.10.2217/pme.15.30
.235 Jagga Z, Gupta D. Machine learning for biomarker identification in cancer research developments toward its clinical application. Personalized Medicine. 2015;12(4):371-87.10.2217/PME.15.5
.236 Wu IC, Chen TL, Cheng YL, Chiou SS, Feng YY, editors. A multi-tiered medical data-mining and visualization framework for rule investigations. Proceedings of the 19th International Conference on Information Quality, ICIQ 2014; 2014.
.237 Oliveira T, Novais P, Neves J. Development and implementation of clinical guidelines: An artificial intelligence perspective. Artificial Intelligence Review. 2014;42(4):999-1027.10.1007/s10462-013-9402-2
.238 Malinowski J, Farber-Eger E, Crawford DC, editors. Development of a data-mining algorithm to identify ages at reproductive milestones in Electronic medical records. Pacific Symposium on Biocomputing; 2014.
.239 Lara JA, Lizcano D, Pérez A, Valente JP. A general framework for time series data mining based on event analysis: Application to the medical domains of electroencephalography and stabilometry. Journal of Biomedical Informatics. 2014;51:219-41.10.1016/j.jbi.2014.06.003
.240 Gobbel GT, Reeves R, Jayaramaraja S, Giuse D, Speroff T, Brown SH, et al. Development and evaluation of RapTAT: A machine learning system for concept mapping of phrases from medical narratives. Journal of Biomedical Informatics. 2014;48:54-65.10.1016/j.jbi.2013.11.008
.241 Deshpande R, Thuptimdang W, Demarco J, Liu BJ, editors. A collaborative framework for contributing DICOM RT PHI (Protected Health Information) to augment data mining in clinical decision support. Progress in Biomedical Optics and Imaging - Proceedings of SPIE; 2014.
.242 Tsolis D, Paschali K, Tsakona A, Ioannou ZM, Likothanassis S, Tsakalidis A, et al. Development of a clinical decision support system using ai, medical data mining and web applications. Communications in Computer and Information Science. 2013;384:174-84.10.1007/978-3-642-41016-1_19
.243 Song MH, Lee YH, Kang UG. Comparison of machine learning algorithms for classification of the sentences in three clinical Practice Guidelines. Healthcare Informatics Research. 2013;19(1):16-24.10.4258/hir.2013.19.1.16
.244 Séroussi B, Soulet A, Spano JP, Lefranc JP, Cojean-Zelek I, Blaszka-Jaulerry B, et al., editors. Which patients may benefit from the use of a decision support system to improve compliance of physician

decisions with clinical practice guidelines: A case study with breast cancer involving data mining. Studies in health technology and informatics; 2013.
.245 Masutani Y, Nemoto M, Nomura Y, Hayashi N. Clinical machine learning in action: CAD system design, development, tuning, and long-term experience. Image Processing: Concepts, Methodologies, Tools, and Applications. 2-32013. p. 621-38.
.246 Bennett CC, Hauser K. Artificial intelligence framework for simulating clinical decision-making: A Markov decision process approach. Artificial Intelligence in Medicine. 2013;57(1):9-19.10.1016/j.artmed.2012.12.003
.247 Séroussi B, Soulet A, Messai N, Laouénan C, Mentré F, Bouaud J. Patient clinical profiles associated with physician non-compliance despite the use of a guideline-based decision support system: a case study with OncoDoc2 using data mining techniques. AMIA Annual Symposium proceedings / AMIA Symposium AMIA Symposium. 2012;2012:828-37
.248 Sankaradass V, Arputharaj K. A descriptive framework for the multidimensional medical data mining and representation. Journal of Computer Science. 2011;7(4):519-25.10.3844/jcssp.2011.519.525
.249 Faravelon A, Verdier C, editors. Towards a framework for privacy preserving medical data mining based on standard medical classifications. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering; 2011.
.250 Zhao J, Wang T, editors. A general framework for medical data mining. 2010 International Conference on Future Information Technology and Management Engineering, FITME 2010; 2010.
.251 Hu YF, Yu J, Zhang C, Wang YN, Cheng X, Huang F, et al. [Development and implementation of a clinical data mining system for gastric cancer surgery]. Zhonghua wei chang wai ke za zhi = Chinese journal of gastrointestinal surgery. 2010;13(7):510-5
.252 Doukas C, Goudas T, Fischer S, Mierswa I, Chatziioannou A, Maglogiannis I, editors. An open data mining framework for the analysis of medical images: Application on Obstructive Nephropathy microscopy images. 2010 Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBC'10; 2010.
.253 Cerrito P. Cases on health outcomes and clinical data Mining: Studies and frameworks2010. 1-443 p.
.254 Zhang HH, D'Souza WD, Shi L, Meyer RR. Modeling Plan-Related Clinical Complications Using Machine Learning Tools in a Multiplan IMRT Framework. International Journal of Radiation Oncology Biology Physics. 2009;74(5):1617-26.10.1016/j.ijrobp.2009.02.065
.255 Toussi M, Lamy JB, Le Toumelin P, Venot A. Using data mining techniques to explore physicians' therapeutic decisions when clinical guidelines do not provide recommendations: Methods and example for type 2 diabetes. BMC Medical Informatics and Decision Making. 2009;9(1).10.1186/1472-6947-9-28
.256 Zhang H, Meyer R, Shi L, D'Souza W, editors. SU-HH-AUD C-03: Machine Learning Tools for Predicting Clinical Complications in a Multi-Plan IMRT Framework. Medical Physics; 2008.
.257 Terenziani P, Montani S, Bottrighi A, Molino G, Torchio M, editors. Applying Artificial Intelligence to clinical guidelines: The GLARE approach. Studies in health technology and informatics; 2008.
.258 Liu J, Deng W, Lu X, Duan H, editors. A term-mapping framework for data mining in heterogeneous medical data sources. 2nd International Conference on Bioinformatics and Biomedical Engineering, iCBBE 2008; 2008.

.259 Lamy JB, Ellini A, Ebrahiminia V, Zucker JD, Falcoff H, Venot A, editors. Use of the C4.5 machine learning algorithm to test a clinical guideline-based decision support system. Studies in health technology and informatics; 2008.
.260 Bellazzi R, Zupan B. Predictive data mining in clinical medicine: Current issues and guidelines. International Journal of Medical Informatics. 2008;77(2):81-97.https://doi.org/10.1016/j.ijmedinf.2006.11.006
.261 Szarvas G, Farkas R, Busa-Fekete R. State-of-the-art Anonymization of Medical Records Using an Iterative Machine Learning Framework. Journal of the American Medical Informatics Association. 2007;14(5):574-80.10.1197/j.jamia.M2441
.262 Rahman M, Bhattacharya P, Desai BC. A framework for medical image retrieval using machine learning and statistical similarity matching techniques with relevance feedback. IEEE Transactions on Information Technology in Biomedicine. 2007;11(1):58-69.10.1109/TITB.2006.884364
.263 Shin H, Markey MK. A machine learning perspective on the development of clinical decision support systems utilizing mass spectra of blood samples. Journal of Biomedical Informatics. 2006;39(2):227-48.10.1016/j.jbi.2005.04.002
.264 Lin JH, Haug PJ. Data preparation framework for preprocessing clinical data in data mining. AMIA Annual Symposium proceedings / AMIA Symposium AMIA Symposium. 2006:489-93
.265 Skevofilakas MT, Nikita KS, Templaleksis PH, Birbas KN, Kaklamanos IG, Bonatsos GN, editors. A decision support system for breast cancer treatment based on data mining technologies and clinical practice guidelines. Annual International Conference of the IEEE Engineering in Medicine and Biology - Proceedings; 2005.
.266 Sboner A, Aliferis CF. Modeling clinical judgment and implicit guideline compliance in the diagnosis of melanomas using machine learning. AMIA Annual Symposium proceedings / AMIA Symposium AMIA Symposium. 2005:664-8
.267 Kopec D, Shagas G, Reinharth D, Tamang S, editors. Development of a clinical pathways analysis system with adaptive Bayesian Nets and data mining techniques. Studies in health technology and informatics; 2004.
.268 Vajirkar P, Singh S, Lee Y. Context-aware data mining framework for wireless medical application. Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). 2003;2736:381-91.10.1007/978-3-540-45227-0_38
.269 Terenziani P, Montani S, Bottrighi A, Torchio M, Molino G, Anselma L, et al., editors. Applying artificial intelligence to clinical guidelines: The glare approach. Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); 2003.
.270 Robson B. Clinical and pharmacogenomic data mining: 1. Generalized theory of expected information and application to the development of tools. Journal of Proteome Research. 2003;2(3):283-302.10.1021/pr025587q
.271 Chen Z, Jiang Y, Xu M, Wang H, Jiang D. The application and development of artificial intelligence in medical diagnosis systems. Journal of biomedical engineering. 2002;19(3):505-9
.272 Tanaka H. Medical application of artificial intelligence--towards the future development. Rinsho byori The Japanese journal of clinical pathology. 1990;Spec No 83:54-73

Appendix H: Scopus and PubMed Search Queries for Challenges in ML-Based Diagnostic Models

Citation Database	Search string	Date	Returned
Scopus	TITLE (("decision tree" OR "neural network" OR "Support vector machine" OR "Artificial intelligence" OR "Fuzzy" OR "machine learning" OR "Data mining" OR "genetic algorithm" OR metaheuristic OR "Meta heuristic" OR "meta-heuristic" OR "Cuckoo search" OR "Bees algorithm" OR "Artificial bee colony algorithm" OR "evolutionary algorithm" OR "Ant colony optimization" OR "Particle swarm optimization" OR "Firefly algorithm" OR "Memetic algorithm") AND (medical OR cancer OR diabetes OR disease) AND (diagnosis OR diagnostic OR diagnosing OR diagnosed OR diagnoses)) AND TITLE (obstacle OR challenge OR problem OR issue OR critics OR barrier OR hinder) AND (LIMIT-TO (SRCTYPE , "j")) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English"))	Oct 30, 2022	24
PubMed	("decision tree"[Title] OR "neural network"[Title] OR "Support vector machine"[Title] OR "Artificial intelligence"[Title] OR "Fuzzy"[Title] OR "machine learning"[Title] OR "Data mining"[Title] OR "genetic algorithm"[Title] OR metaheuristic[Title] OR "Meta heuristic"[Title] OR "meta-heuristic"[Title] OR "Cuckoo search"[Title] OR "Bees algorithm"[Title] OR "Artificial bee colony algorithm"[Title] OR "evolutionary algorithm"[Title] OR "Ant colony optimization"[Title] OR "Particle swarm optimization"[Title] OR "Firefly algorithm"[Title] OR "Memetic algorithm"[Title] or "Memetic algorithm" [Title]) AND (diagnosis[Title] OR diagnostic[Title] OR diagnosing[Title] OR diagnosed[Title] or diagnoses[Title]) AND (obstacle[Title] OR challenge[Title] OR problem[Title] OR issue[Title] OR critics[Title] OR barrier[Title] OR hinder[Title])	Oct 30, 2022	14

Appendix I: Summary of the expert consensus workflow from evidence synthesis to framework validation.

Level	Experts	Step	Input	Process	Output
Level 1	4	1	Systematic review findings (Phase I)	Challenge and gap extraction by the authors (research team)	35 challenges
		2	35 challenges	Independent expert brainstorming	32 raw ideas
		3	32 ideas	Merging and conceptual analysis	18 abstract concepts
		4	18 concepts	Delphi Round 1	12 preliminary principles
		5	12 principles	Inter-round analysis and refinement	10 revised principles
		6	10 principles	Delphi Round 2	10 final principles
Level 2	7	7	Barrier list from Phase II	Refinement, validation, and conceptual categorization	8 core adoption barriers
Level 3	8	8	10 principles + 8 barriers	Questionnaire design by the research team	Initial questionnaire items
		9	Questionnaire	CVR, CVI, and reliability analysis	Final questionnaire
Level 4	44	10	Final questionnaire	Expert survey	Framework assessment