

Appendix A: ResNet50 Hyperparameter Tuning: A Comprehensive Approach

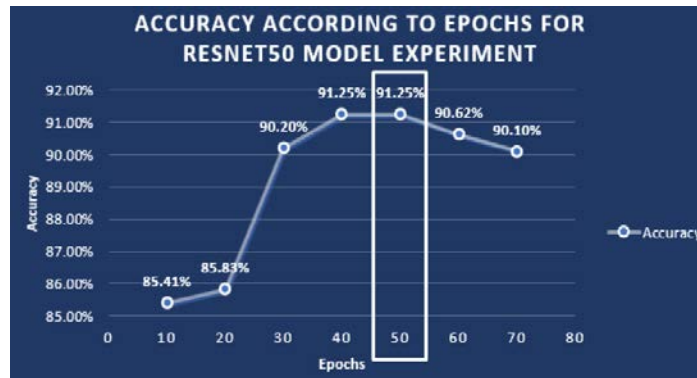


Fig. A.1 Accuracy according to epochs for the ResNet50 model experiment

The author conducted experiments on numerous epochs for the ResNet50 model and analyzed the accuracy accordingly, as shown in Fig. A.1. The author concluded after analyzing the epochs' activities that accuracy is steady for the first 50 epochs, but after that, accuracy decreases. So, the ideal epoch number for the ResNet50 experiment is 50.

The author evaluated the accuracy, precision, recall, and F1-Score from epochs data for the proposed model's performance for each class, as shown in Table A.1.

Table A.1 Epoch results (after 10 epochs, in %): Precision, Recall, and F1-Score

Epoch	Class	Precision	Recall	F1-Score
10	Not Glaucoma	82.14	94.78	88.01
	Glaucoma	74.66	42.74	54.36
20	Not Glaucoma	80.20	93.76	86.45
	Glaucoma	79.20	50.63	61.77
30	Not Glaucoma	85.33	87.91	86.60
	Glaucoma	63.33	58.01	60.55
40	Not Glaucoma	83.79	90.93	87.22
	Glaucoma	67.00	51.14	58.00
50	Not Glaucoma	82.13	91.39	86.51
	Glaucoma	75.83	57.59	65.46
$\mu \pm \sigma$	Not Glaucoma	82.71 ± 1.73	91.75 ± 2.39	86.95 ± 0.59
	Glaucoma	72.00 ± 5.89	52.02 ± 5.58	60.02 ± 2.99

As illustrated in Table A.1, the effectiveness of the ResNet50 model for each class, as well as the accuracy, precision, recall, and F1-score from epochs data, were analyzed on a category basis. Table A.1 shows that the Hybrid model has the following results: accuracy of 72.00 ± 5.89 – 82.71 ± 1.73 , recall of 52.02 ± 5.58 – 91.75 ± 2.39 , and F1-Score of 60.02 ± 2.99 – 86.95 ± 0.59 . The ResNet50 model has the maximum F1-Score in the "Not Glaucoma" class, indicating that it is receptive to such features.

Appendix B: VGG-16 Hyperparameter Tuning: A Comprehensive Approach

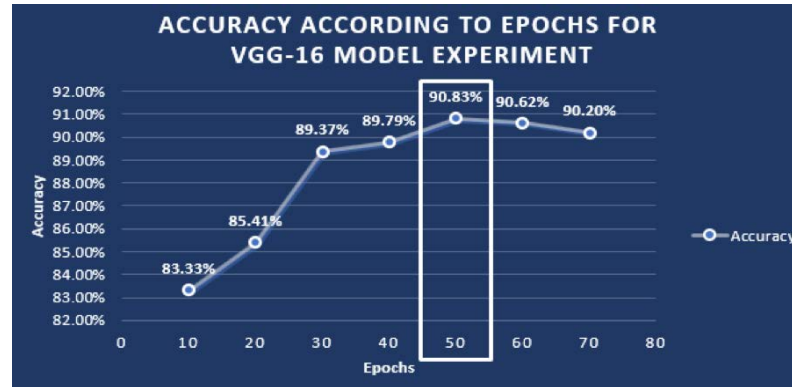


Fig B.1 Accuracy according to epochs for the VGG-16 model experiment

The author conducted experiments on numerous epochs for the VGG-16 model and analyzed the accuracy accordingly, as shown in Fig B.1. The author concluded after analyzing the epochs' activities that accuracy is steady for the first 50 epochs, but after that, accuracy decreases. So, the ideal epoch number for the VGG-16 experiment is 50.

The author evaluated the accuracy, precision, recall, and F1-Score from epochs data for the proposed model's performance for each class, as shown in Table B.1.

Table B.1 Epoch results (after 10 epochs, in %): Precision, Recall, and F1-Score

Epoch	Class	Precision	Recall	F1-Score
10	Not Glaucoma	82.03	86.53	84.22
	Glaucoma	55.85	47.32	51.24
20	Not Glaucoma	80.54	88.73	84.44
	Glaucoma	56.38	40.45	47.11
30	Not Glaucoma	82.99	79.12	81.01
	Glaucoma	48.64	54.96	51.61
40	Not Glaucoma	80.42	83.51	81.94
	Glaucoma	48.71	43.51	45.96
50	Not Glaucoma	79.56	90.93	84.87

	Glaucoma	58.22	35.11	43.81
$\mu \pm \sigma$	Not Glaucoma	81.10 ± 1.23	85.76 ± 4.13	83.29 ± 1.53
	Glaucoma	53.56 ± 4.06	44.27 ± 6.67	47.94 ± 3.03

As illustrated in Table B.1, the effectiveness of the VGG-16 model for each class, as well as the accuracy, precision, recall, and F1-score from epochs data, were analyzed on a category basis. Table B.1 shows that the Hybrid model has the following results: accuracy of 53.56 ± 4.06 – 81.10 ± 1.23 , recall of 44.27 ± 6.67 – 85.76 ± 4.13 , and F1-Score of 47.94 ± 3.03 – 83.29 ± 1.53 . The VGG-16 model has the maximum F1-Score in the "Not Glaucoma" class, indicating that it is receptive to such features.