

Supplementary Material _ Data Availability Notice

Manuscript title: A low-cost automated photogrammetry system enables accurate and reproducible 3D cranial morphometrics

All supplementary files associated with this manuscript are publicly available in the Zenodo repository at the following address:

<https://doi.org/10.5281/zenodo.20968724>

This is the concept DOI of the record and always resolves to its current version.

The deposit contains eight files, cited throughout the manuscript as Appendix S1 to Appendix S8 and named accordingly in the repository:

Appendix S1. Workflow in Agisoft Metashape for skull digitization, covering image acquisition, alignment, dense point cloud generation, mesh construction, and texturing.

Appendix S2. Scanned human skulls: one folder per specimen (25 in total), each containing the Agisoft Metashape project file (.psx) with its support files, a textured three-dimensional cranial model (.obj) with its material (.mtl) and texture (.jpg) files, a dense point cloud (.laz), and a confidence-coloured dense point cloud (.ply).

Appendix S3. Cranial landmarks and notation: identifier, three-dimensional notation, and anatomical definition of the 15 landmarks.

Appendix S4. Landmark coordinate files in .fcsv format exported from 3D Slicer (v. 5.8.1).

Appendix S5. R scripts used for all statistical analyses.

Appendix S6. Complete repeatability analysis for all 105 interlandmark pairs.

Appendix S7. Point cloud confidence maps for all 25 crania: 150 images, six standardized views per specimen.

Appendix S8. Linear distances (prosthion–nasion) used for metric scaling of the meshes, with three replicate caliper measurements per specimen.

All eight appendices are hosted in the repository rather than as article supplementary files, since their aggregate size (20.3 GB) exceeds the file-size limits of the submission system. All files are freely accessible without registration. The raw photographic dataset (108 images per specimen) is available from the corresponding author upon request.