Photo

Obtaining 3D craniofacial morphometric data is essential in a variety of medical and educational disciplines. Quispe-Enriquez et al. explored smartphone-based photogrammetry with photos and video recordings as an effective tool to create accurate and accessible metrics from head 3D models. The research involves the acquisition of craniofacial 3D models on both volunteers and head mannequins using a Samsung Galaxy S22 smartphone. For the photogrammetric processing, Agisoft Metashape v 1.7 and PhotoMeDAS software v 1.7 were used. The Academia 50 white-light scanner was used as reference data (ground truth). A comparison of the obtained 3D meshes was conducted, yielding the following results: 0.22 ± 1.29 mm for photogrammetry with camera photos, 0.47 ± 1.43 mm for videogrammetry with video frames, and 0.39 ± 1.02 mm for PhotoMeDAS. Similarly, anatomical points were measured and linear measurements extracted, yielding the following results: 0.75 mm for photogrammetry, 1 mm for videogrammetry, and 1.25 mm for PhotoMeDAS, despite large differences found in data acquisition and processing time among the four approaches. This study suggests the possibility of integrating photogrammetry either with photos or with video frames and the use of PhotoMeDAS to obtain overall craniofacial 3D models with significant applications in the medical fields of neurosurgery and maxillofacial surgery [1)].

1)
Quispe-Enriquez OC, Valero-Lanzuela JJ, Lerma JL. Craniofacial 3D Morphometric Analysis with Smartphone-Based Photogrammetry. Sensors (Basel). 2023 Dec 30;24(1):230. doi: 10.3390/s24010230. PMID: 38203091.

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