

Usage Example for the IEEE Dataset

“New research continues to support that 3D digital body scanning is a notable upgrade to traditional (manual) measuring techniques. The IEEE conducted a 3D body scan survey involving multiple 3D body scanners in various hardware configurations. The study leveraged three mobile phone scanning apps, all scanning a diverse base of 65 male and female subjects. Manual measurements were also taken by two measuring experts to provide a baseline of traditional measurement. The data from this survey is now publicly available upon request. One of the scanners involved in the study was the [IBV MOVE4D](#) scanner, recognized as one of the highest quality stationary scanners available. [Size Stream LLC](#), a global leader in accurate, affordable body scanning technology, participated in this study as well.

As is common in most specialized industries, members of the 3D scanning community often leverage each other’s technology to benchmark continuous improvement efforts. Size Stream utilizes the scan data from the MOVE4D stationary scanner as one resource to evaluate the impact of changes to new versions of Size Stream’s mobile scans focusing on both accuracy and precision. Size Stream’s technology utilizes front and side view photos to produce a 3D body avatar with over 240 body measurements.

The IEEE survey proved that researchers could leverage synthetic front and side photos from the MOVE4D scans (or other scan sources from the study) and process them through the Size Stream body scan production pipeline. After the new Size Stream avatars were produced, they were compared to the original source scans to evaluate the quality of replication. Analysis proved that Size Stream’s mobile technology replicates the original photos and measures them more accurately and precisely than is possible by manual measurement.

A critical first step in assessing scan accuracy is setting a ground truth which is considered “correct”. The process of taking synthetic images of known high-quality 3D scans is one way to assess accuracy of scans from mobile devices using camera images. However, using synthetic images of 3D body scans is not equivalent to producing 3D body scans directly from photos. One complication scanning photos directly is that other sources of error that can originate from the photo processing that would not be exposed by processing of synthetic images from 3D body scans.”

From David Bruner & Kevin Hemberg, Size Stream, December 2023

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