

Essential Elements of 3D Body Scanning for Applications in Retail and Research

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Abstract

3D body scanning first emerged as a human body measurement tool in technical and research application areas in the 1990's. In recent years lower cost and more highly automated systems have been finding their way into retail applications. The body scanning protocols for technical applications have largely been driven by the anthropometric/ergonomics technical communities. Retail protocols have been driven by agents of the commercial retail businesses in the apparel, fitness, and medical communities. Though there is some overlap in these protocols, there are also significant differences. Size Stream has developed a low cost automated 3D body scanning system with the intention of meeting the requirements and needs of the full spectrum of applications from technical research to retail applications.

In order to meet the needs of both technical research and retail body scanning applications many features are essential beyond simple 3D data capture. These include:

- robust hardware and software, easy to install, operate, and maintain
- simple user interface, fast and convenient data capture
- private and comfortable scan experience
- automatic data processing to organized meshes and aesthetic avatars
- comprehensive automatic and manual measurement tools
- compliance to recognized standards, accommodation of custom measures
- color texture capture aligned to the 3D data
- 3D capture in real time, 4D body scanning

Keywords: 3d body scanning, 4d body scanning, color 3D scanning, 3d body measurement

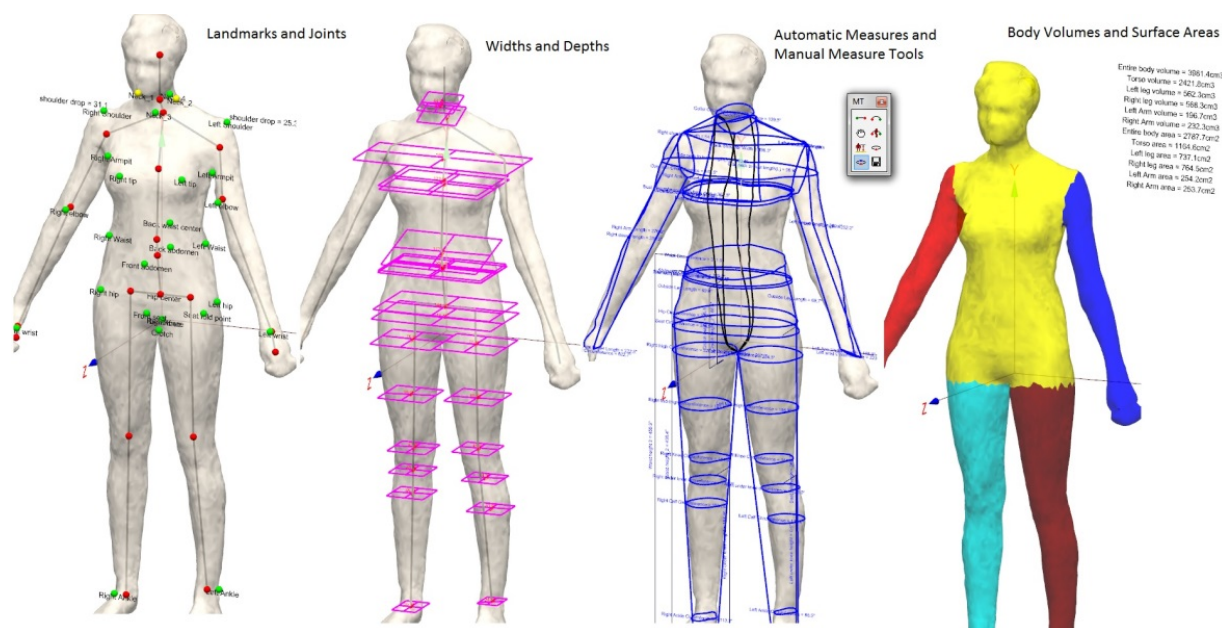


Fig. 1. Automatic and Manual Segmentation, Landmarking, and Measurement.

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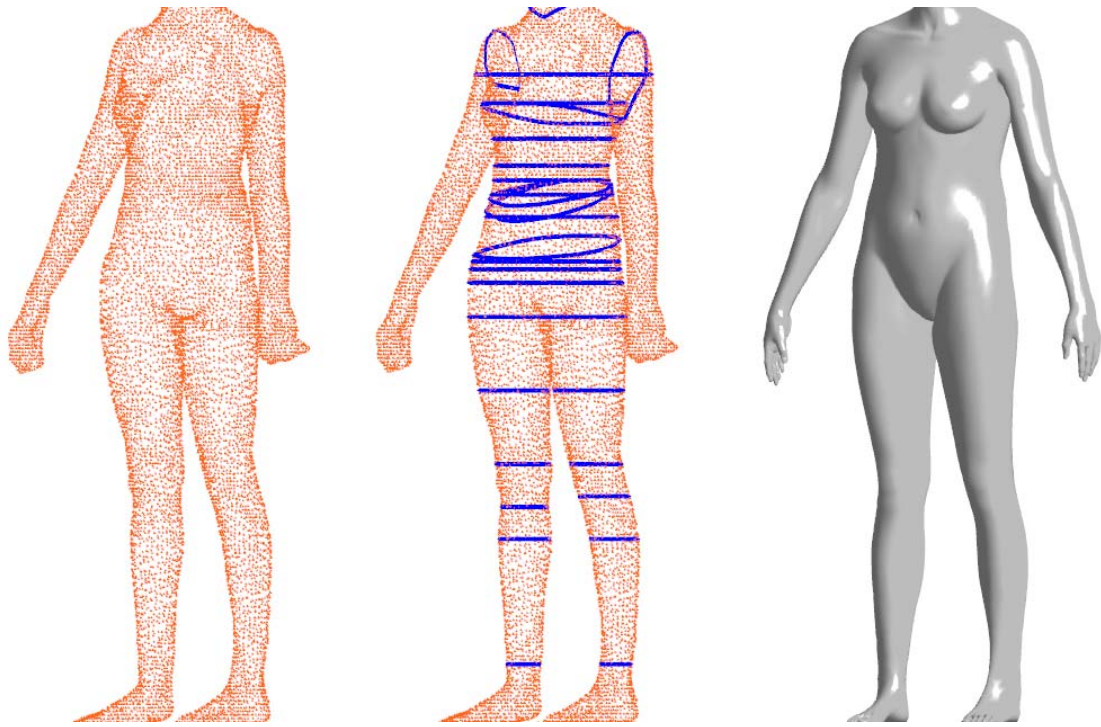


Fig. 2. High Resolution Raw Data, to Mesh and Measurements, to Avatar.



Fig 3. Color Capture for Technical Landmarking and Consumer 3D Printing.