

## **Bodyhub.com: A Cloud-Based Service for Automatically Creating Highly Accurate Articulated 3D Models from Body Scans**

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### **Introduction**

Body Labs, Inc. started operations in early 2013 with the goal of commercializing the technology developed by Dr. Michael Black's group – first at Brown University and now at the Max Planck Institute.

### **Abstract**

There are many 3D body scans in the world that are not being used because people lack the tools to process them, analyze them, and animate them. When a person is scanned, large portions of their 3D surface shape are captured, but the full scan often suffers from noise and missing data. At best, the scan provides a static snapshot of the person in a single 3D pose. Building on the world-class scan registration technology demonstrated by MPI Director Michael Black during last year's keynote, Body Labs, Inc. will premier a cloud-based service that allows anyone to upload their full body 3D scans to automatically create highly-accurate 3D body models. These models can be both reposed and reshaped, and provide an ideal solution for converting noisy 3D scans or point clouds into a clean, consistent 3D models that can be directly imported into standard CAD/animation software.

Bodyhub.com fits each customer's scans with a single, deformable model that accurately captures the statistics of human pose and shape variation. This fitting process automatically accounts for missing data, and makes it fast and affordable to turn 3D scans into 3D bodies. Once a scan has been converted to a model, its shape and pose can be understood and manipulated. Anatomical measurements can be extracted, and even adjusted, as can the person's 3D pose. By fitting all scans to a common 3D template mesh, Body Labs is also able to extract statistics from a collection of scans, identifying, for example, how specific parts of the body vary in shape across the sampled population. The collection of scans can also be supplemented with 3D bodies created from measurements alone.