Digital Human Modeling for Engineering Applications

Matthew Reed

Biosciences Group, University of Michigan, Ann Arbor, Michigan

Abstract

Computational models of humans are increasingly useful for incorporating knowledge of human attributes and needs into engineering design processing. At the University of Michigan, recent research has focused on creating parametric models of human anatomy, including external body shape and internal skeletal anatomy, for a wide range of applications. New measurement technologies, coupled with advances in data processing and statistical methods, have provided the foundation for a new computational framework for incorporating human variability into engineering. The humans building, using, maintaining, and disassembling a product or system are almost always more variable than any other factor contributing to its success or failure, so accurate representations of people in all their complexity is critical to successful design.

Short Bio

Dr. Reed is a research professor and head of the Biosciences Group of the University of Michigan Transportation Research Institute. Dr. Reed is also a research professor in Industrial and Operations Engineering and directs the Human Motion Simulation Laboratory in the Center for Ergonomics. Dr. Reed's research focuses on vehicle safety, engineering anthropometry, and digital human modeling.

Website: http://mreed.umtri.umich.edu