Modeling shape and motion for computer graphics and robotics
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Abstract:
Computer graphics models and computer generated imagery are a core component of modern scientific analysis, entertainment, and communication of ideas. Unfortunately, most methods for creating sufficiently complex models rely heavily on tedious manual specification and skilled artists. Acquiring models directly from the real world allows us to leverage and explore the phenomenal complexity of nature. This talk will present the results of several projects for recovering geometric models directly from the real world. Topics include mixed scale motion capture, recovering large scale geometry, filling holes in geometric data, and capturing deforming surfaces.

This talk will give a broad overview of the areas I work in, rather than a detailed discussion of the particular methods. I hope to stimulate a lively discussion about what is currently possible and what will become possible in the next N years.

About the Speaker:
James Davis is currently an assistant professor at University of California at Santa Cruz, with research focused primarily on computer graphics and machine vision. After obtaining his PhD from Stanford University in 2002, he spent two years at Honda Research Institute, USA, working on real-time range sensing for humanoid robotics applications. His research on motion capture was awarded the prize for best computer vision paper at IEEE ICRA 2003. His work on image mosaicing was commercialized as part of Sony's PictureGear, and earlier work on multimedia interfaces was released in Prentice Hall's "Masterworks: A Musical Discovery".

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