

### Information Science and Technology Seminar Speaker Series



**Professor James Davis**  
**University of California, Santa Cruz**

### Understanding Image-based Data using Human Computation

**Wednesday, March 26, 2014**

**3:00 - 4:00 PM**

**TA-3, Bldg. 1690, Room 102 (CNLS Conference Room)**

**Abstract:** Most of the data collected and stored in the world is in the form of images or video, and understanding images is critical to many computational systems. Computational systems are very good at managing large amounts of data and finding statistical patterns in huge labeled datasets. Unfortunately, machine computation is not yet very good at robust small scale contextual understanding, such as determining if a circular object in an image is a face or a wheel. In contrast, humans are exceptionally good at this kind of task. The lack of robustness at the small scale, limits the robustness of the intended large scale understanding. Our work seeks to enhance machine understanding of image based data by including human computational units as an element inside larger computational systems. By using human input as sub-routines inside a larger computational system, small scale annotation and labeling can be achieved robustly. These labels will in turn allow robust computer understanding of large datasets.

**Biography:** Prof. James Davis is an Associate Professor in Computer Science at University of California Santa Cruz. His research areas include computer graphics, computer vision, computational photography, human computation, and ICTD. This work has resulted in over 100 peer-reviewed publications, patents, and invited talks, received an ICRA 2003 Best Vision Paper, ICCV 2009 Marr Prize and an NSF CAREER award. He was the founding director of the Center for Entrepreneurship (C4E) at University of California Santa Cruz. His teaching has twice been awarded for innovative style, including a course on the importance of technology to social entrepreneurship. He is on the advisory boards of several for-profit and non-profit organizations. He received his PhD from Stanford University in 2002, and was a senior research scientist at Honda Research Institute 2002-2004.

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