

KEYNOTE TALK  
*Wednesday, December 1, 2010*  
*1:30PM – 2:30 PM / Ballroom 4-5*

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## **Ubiquitous Displays: A Distributed Network of Active Displays**

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### **Abstract**

This talk presents our work-in-progress on developing a new display paradigm where displays are not mere carriers of information, but active members of the workspace interacting with data, user, environment and other displays. The goal is to integrate such active displays seamlessly with the environment making them ubiquitous to multiple users and data. Such ubiquitous display can be a critical component of the future collaborative workspace.

We have developed an active display unit, a projector augmented with sensors, and an embedded computation and communication unit. We are exploring for the first time, the challenges and capabilities resulting from instrumenting a workspace with a distributed network of such active displays to achieve ubiquitous displays. Our main objective is to develop novel distributed methodologies (a) to cover existing surfaces (e.g. walls, floors) - that can deviate considerably from planar, white and Lambertian - with multiple active displays; (b) provide scalability and recon durability (in terms of scale, resolution and form factor) of displays; (c) provide a framework for shared viewing and interaction modalities for multiple users.



**Speaker Bio-Sketch:** Aditi Majumder is an associate professor at the Department of Computer Science in University of California, Irvine. She received her BE in Computer Science and Engineering from Jadavpur University, Calcutta, India in 1996 and PhD from Department of Computer Science, University of North Carolina at Chapel Hill in 2003. Her research area is computer graphics and vision, image processing with primary focus on multi-projector displays. Her research aims to make multi-projector displays truly commodity products and easily accessible to the common man. Her significant research contributions include photometric and color registration across multi-projector displays, enabling use of imperfect projectors in tiled displays and more recently a distributed framework for tiled displays via a distributed network of projector-camera pairs. She is the co-author of the book "Practical Multi-Projector Display Design". She was the program and general co-chair of the Projector-Camera Workshop (PROCAMS) 2005 and the program chair of PROCAMS 2009.

She was also the conference co-chair for ACM Virtual Reality Software and Technology 2007. She has played a key role in developing the first curved screen multi-projector display being marketed by NEC/Alienware currently and is an advisor at Disney Imagineering for advances in their projection based theme park rides. She is the recipient of the NSF CAREER award in 2009 for Ubiquitous Displays Via a Distributed Framework.