MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Department of Electrical Engineering and Computer Science

SPECIAL SEMINAR

"Designing Appropriate Computing Technologies for the Rural Developing World"

Mr. Tapan S. Parikh

The University of Washington

Thursday, April 5, 2007 – 4:00 – 5:00 pm.

(Refreshments 3:45 pm)

32-G449, Patil/Kiva

Recent history has seen an increase in disparity between the rich and poor regions of the world. Disproportionate access to information is both a symptom and a factor contributing to this disparity. People living in the rural developing world have many information needs that could, but are not, being met by information technology. Technology for this context must be low-cost, accessible and appropriate given the local infrastructure, including conditions of intermittent power and connectivity. In this talk, I describe my experiences developing CAM - a toolkit for mobile phone data collection for the rural developing world. Designing technologies for an unfamiliar context requires understanding the needs and capabilities of potential users. Drawing from the results of an extended design study conducted with microfinance group members in rural India (many of whom are semi-literate or illiterate), I outline a set of user interface design guidelines for accessibility to such users. The results of this study are used to inform the design of CAM, a mobile phone application toolkit including support for paper-based interaction; multimedia input and output; and disconnected operation. I provide evidence of CAM's usability, breadth, and real-world applicability. Regarding real-world applicability, a CAM application for microfinance data collection is now being used by 17 NGO (non-governmental organization) staff to serve over 10000 group members in two states of India. Regarding breadth, I list some important rural data collection applications - including for retail supply chain tracking, agricultural monitoring and health care - that we have implemented, or can be implemented, using the CAM toolkit. I conclude by discussing possible topics for future work and my long-term research vision.

Bio: Tapan S. Parikh is an Intel Fellow and Ph.D. Candidate in the Department of Computer Science & Engineering at the University of Washington. Earlier, he received a M.S. degree in Computer Science from UW and a Sc.B. degree in Molecular Modeling (with Honors) from Brown University. Tapan's research interests include human-computer interaction (HCI), systems engineering and information and communication technologies for development (ICTD).