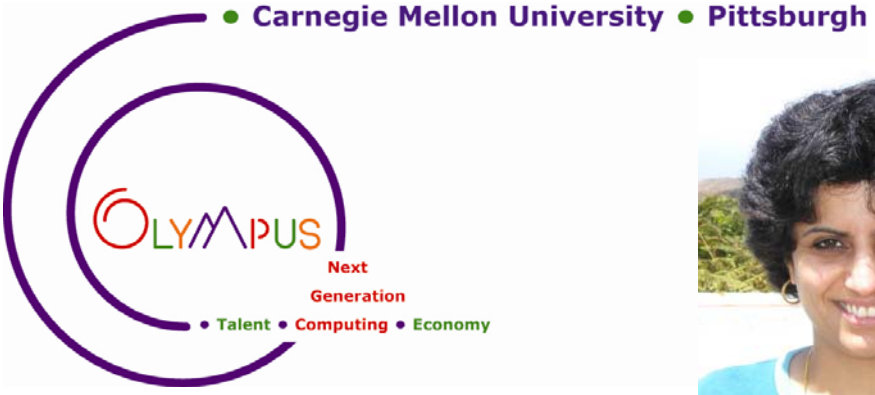

Priya Narasimhan
Associate Professor
Electrical and Computer Engineering,
Carnegie Mellon University
priya@cs.cmu.edu
http://www.cs.cmu.edu/~priya

Assistive Mobile Technologies for the Blind

Dr. Priya Narasimhan is an Associate Professor of Electrical and Computer Engineering at Carnegie Mellon University. She has over 13 years of experience in architecting and implementing dependable distributed systems, and in incorporating the results of her research into industrial practice. Her PhD research had wide impact through her contributions to the Fault-Tolerant CORBA standard, which has been commercially adopted by a consortium of over 800 companies. As the CTO and VP Engineering of a startup company, called Eternal Systems, she enabled the transition of her research into commercial fault-tolerance products. She has authored 60+ papers in the field of dependable distributed systems, served on various program committees, and organized several workshops. She was awarded Alfred Sloan Fellowship (2006), the Lancaster Outstanding PhD Dissertation Award (1999), a National Science Foundation CAREER Award (2002), two IBM Faculty Partnership Awards (2002, 2005), a Raytheon Company Best Paper Award (2003) and a Berkman Faculty Development Award (2006).

Her research interests lie in the following areas: dependable middleware, reconfigurable distributed systems, embedded sensor middleware, zero-downtime code upgrades, and distributed system security. Her current research projects include a focus on dependable adaptive middleware (the MEAD System), distributed sensor middleware (the Maples system and Sluice), survivability benchmarking (Vajra) and automated fingerpointing or failure diagnosis in distributed systems (Sherlock). She always remains interested in the application of embedded systems to make society better, through the Trinetra project.

Trinetra aims to develop cost-effective, smartphone-enabled assistive technologies to provide people with an enhanced quality of life in their daily activities. The broad objective is to harness the collective capability of diverse networked embedded devices to support location-aware and context-aware applications, including first-responder support, building navigation, retail shopping, smart transportation, etc. The project was originally conceived to enable greater independence for the blind and the visually impaired. To date, we have researched and developed a portable barcode-based solution involving an Internet- and Bluetooth-enabled smartphone to aid grocery shopping at the Carnegie Mellon campus convenience store, Entropy. We have also more recently extended this to assist both sighted and visually impaired commuters with their transportation and commute-planning needs, using a smart phone to convey notifications of arrivals, departures, etc. We have also developed a phone-based currency identifier for the visually impaired.