

## Sasank Reddy

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Center for Embedded Networked Sensing  
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### Education

Ph.D. Electrical Engineering, University of California at Los Angeles, 2010 (Expected), GPA: 4.0

M.S. Electrical Engineering, University of California at Los Angeles, 2006, GPA: 4.0  
Thesis: ESP Framework: A Middleware Architecture For Heterogeneous Sensor Networks

B.S. Computer Engineering, Georgia Institute of Technology, 2002, GPA: 3.95

### Research Experience

Graduate Research Assistant 2006–Present  
Center for Embedded Networked Sensing University of California at Los Angeles  
Involved in the Urban/Participatory Sensing project. Investigating issues related to contextual sensing, quality of participation, mobility mining, and feedback when considering human-in-the-loop sensing.

Visiting Student 2007  
Responsive Environments - MIT Media Lab Massachusetts Institute of Technology  
Worked on the Spinner project, which investigated how to map everyday activities into parametric narrative story structures (conflict, stress, goal seeking). Created wearable and infrastructure based sensor nodes to gather context information about social settings and developed algorithms for narrative mapping.

Graduate Research Assistant 2005–2006  
Electronic Design Automation Lab University of California at Los Angeles  
Researched techniques for low power circuit design. Specifically worked on creating a power efficient pulse width modulation DC/DC converter with zero voltage switching.

Volunteer Researcher 2004–2005  
Georgia Tech Computer Aid Design Lab Georgia Institute of Technology  
Created physical synthesis design tools for Field Programmable Analog Arrays.

Undergraduate Research Assistant 2000–2002  
Computer Engineering Department Georgia Institute of Technology  
Optimized mechanisms for optical network switching using electro-optical polymers through simulation.

Undergraduate Research Assistant 2000  
Remote Sensing Research Center Mississippi State University  
Used image data mining tools to apply kalman filters to eliminate intermediate noise in hyper-spectral data used in large scale crop production.

Volunteer Researcher 1998-1999  
Engineering Research Center Mississippi State University  
Analyzed the performance and design limitations of OpenInventor, a tool built on OpenGL for higher level graphics abstractions.

## Work Experience

Radiant Systems Alpharetta, Georgia  
Software Developer 2002–2005  
Tasks included developing point of sale and fuel controller applications for the Petroleum and Convenience Store industry. Projects involved using embedded systems that employed the Windows CE platform.

Educational Design Institute Mississippi State University  
Web Developer 2001  
Designed and setup a website that went over design guidelines for building schools in Mississippi. Involved the use of various scripting languages and a database back-end.

## Publications

S. Reddy, M. Mun, J. Burke, D. Estrin, M. Hansen, M. Srivastava, “Using Mobile Phones to Determine Transportation Modes,” *ACM Transactions on Sensor Networks*, To Appear, 2009.

M. Mun, S. Reddy, K. Shilton, N. Yau, P. Boda, J. Burke, D. Estrin, M. Hansen, E. Howard, R. West. “PEIR, the Personal Environmental Impact Report, as a Platform for Participatory Sensing Systems Research,” in *International Conference on Mobile Systems, Applications and Services (Mobisys)*, June 2009.

S. Reddy, K. Shilton, J. Burke, D. Estrin, M. Hansen, M. Srivastava. “Using Context Annotated Mobility Profiles to Recruit Data Collectors in Participatory Sensing,” in *Symposium on Location and Context Awareness (LoCA)*, May 2009.

S. Reddy, K. Shilton, J. Burke, D. Estrin, M. Hansen, M. Srivastava, “Evaluating Participation and Performance in Participatory Sensing,” in *UrbanSense Workshop at Sensys*, November 2008.

S. Reddy, J. Burke, D. Estrin, M. Hansen, M. Srivastava, “Determining Transportation Mode On Mobile Phones,” in *IEEE International Symposium on Wearable Computers (ISWC)*, October 2008.

K. Shilton, N. Ramanathan, S. Reddy, V. Samanta, J. Burke, D. Estrin, M. Hansen, M. Srivastava, “Participatory Design of Sensing Networks: Strengths and Challenges,” in *Participatory Design Conference*, October 2008.

E. Agapie, G. Chen, D. Houston, E. Howard, J. Kim, M. Y. Mun, A. Mondschein, S. Reddy, R. Rosario, J. Ryder, A. Steiner, J. Burke, E. Estrin, M. Hansen, and M. Rahimi, “Seeing Our Signals: Combining Location Traces and Web-Based Models for Personal Discovery,” in *IEEE Workshop on Mobile Computing Systems and Applications (HotMobile) 2008*, February 2008.

S. Reddy, J. Burke, D. Estrin, M. Hansen, and M. Srivastava, “A Framework for Data Quality and Feedback in Participatory Sensing,” *Poster Abstract, Sensys 2007*, November 2007.

S. Reddy, A. Parker, J. Hyman, J. Burke, D. Estrin, and M. Hansen. *Image Browsing, Processing, and Clustering for Participatory Sensing: Lessons From a DietSense Prototype.* in *Embedded Networked Sensors (EmNets) 2007*, June 2007.

S. Reddy, G. Chen, B. Fulkerson, S. J. Kim, U. Park, N. Yau, J. Cho, M. Hansen, and J. Heidemann, “Sensor-Internet Share and Search: Enabling Collaboration of Citizen Scientists,” *Workshop on Data Sharing and Interoperability on the World-wide Sensor Web, IPSN 2007*, April 2007.

F. Baskaya, S. Reddy, S.K. Lim, and D.V. Anderson, “Placement for Large-scale Floating-Gate Field Programmable Analog Arrays,” *IEEE Transactions on Very Large Scale Integration Systems*, Vol. 14, No. 8, pp. 906-910, 2006.

A. Parker, S. Reddy, T. Schmid, K. Chang, G. Saurabh, M. Srivastava, M. Hansen, J. Burke, D. Estrin, M. Allman, and V. Paxson. "Network System Challenges in Selective Sharing and Verification for Personal Social and Urban Scale Sensing Applications," Proceedings of HotNets, 2006.

J. Burke, D. Estrin, M. Hansen, A. Parker, N. Ramanathan, S. Reddy, and M.B. Srivastava. "Participatory Sensing," World Sensor Web Workshop, ACM Sensys 2006, Boulder, Colorado, 2006.

S. Reddy and J. Mascia. "Lifetrak: Music In Tune With Your Life," Workshop on Human-Centered Multimedia of ACM Multimedia, October 2006.

C. Long, S. Reddy, L. He, S. Pamarti, and T. Karnik. "Power-efficient Pulse Width Modulation DC/DC Converters with Zero Voltage Switching Control," International Symposium on Low Power Electronics and Design, October 2006.

F. Baskaya, S. Reddy, S.K. Lim, and D.V. Anderson, "Hierarchical Placement for Large-scale FPAA," International Conf. on Field Programmable Logic and Applications, pp. 421-426, 2005.

F. Baskaya, S. Reddy, S.K. Lim, T. Hall, and D.V. Anderson, "Mapping Algorithm for Large-scale Field Programmable Analog Array," ACM ISPD, p152-158, 2005.

S. Reddy, A. Adibi, Y. Xu, R.K. Lee, "Design of Electronic Modes in Photonic Crystal Optical Waveguides." in Proc. SPIE International Society of Optical Engineering, Vol. 4655, pp. 73-80, 2002.

### **Invited Presentations**

Participatory Sensing Overview, University of Southern California EE 579 Class Lecture, February 2008.

PICK: A Framework for Choosing Data Collectors in Participatory Sensing, CENS Technical Seminar Series, November 2007.

Credibility and Feedback in Participatory Sensing, CENS Annual Research Review, October 2007.

Partisan - An Architecture for Participatory Sensing, CENS Technical Seminar Series, August 2006.

### **Demonstrations**

S. Reddy, T. Schmid, A. Parker, J. Porway, G. Chen, A. Joki, J. Burke, M. Hansen, D. Estrin, and M. Srivastava. "UrbanCENS: Sensing with the Urban Context in Mind" in Ubicomp: The Eight International Conference on Ubiquitous Computing, 2006.

D. McIntire, K. Ho, B. Yip, S. Reddy, T. Schmid, A. Singh, W. Wu, and W.J. Kaiser. "Demonstration of The Low Power Energy Aware Processing (LEAP) Embedded Networked Sensor System" in Information Processing in Sensor Networks, 2006. (Best Demo)

### **Honors and Awards**

Dissertation Year Fellowship, University of California at Los Angeles, 2009

Continuing Student Fellowship, Electrical Engineering Department, UCLA, 2008

Fellowship, University of California at Los Angeles, 2005

Undergraduate Research Award, Georgia Institute of Technology, 2001

Sprint Academic Scholarship, 2000