

CURRICULUM VITAE

EMILIANO MILUZZO

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CONTACT INFORMATION

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EDUCATION

Dartmouth College, Hanover, NH, USA
- **Sept. 2005 - Present:** Ph. D. Computer Science candidate
University of Rome “La Sapienza”, Rome, Italy
- M. Sc. and B. Sc. (04/2003), GPA: 3.8

RESEARCH

09/2005 – Present: Dartmouth College, Dept. of Computer Science, Hanover, NH

Graduate Research Assistant - Designing, developing, and testing wireless sensor network systems under the supervision of Prof. Andrew T. Campbell.

- **CenceMe**

Currently developing and evolving CenceMe, the first application that integrates sensing and social networking. By using sensors (e.g., accelerometer, microphone, GPS, and compass if available) of-the-shelf devices such as mobile phones and machine learning techniques applied to the sensor data, CenceMe determines the activity and social context of a person and export this information on Facebook, MySpace, and Twitter. A prototype of CenceMe has been built for Symbian S60 phones and is currently available for Apple iPhone on the App Store.

- **MetroSense Project**

MetroSense is an architecture to support people-centric urban sensing at scale. We designed the architecture to exploit resources asymmetry and symbiotically operate with existing networks infrastructures. Part of the architecture is the opportunistic sensor networking model which exploits the uncontrolled mobility of people and vehicles to efficiently support sensing and communications in large scale urban settings. We are currently building the MetroSense infrastructure in the Dartmouth College Campus and it is already operational in the Computer Science building.

09/2004 – 08/2005: Columbia University, COMET Group, New York, NY

Visiting Researcher under the supervision of Prof. Andrew T. Campbell.

- **The Armstrong Project**

Medium Access Protocol: Design, development, and analysis of a new hybrid TDMA/CSMA protocol to mitigate the funneling effect, a phenomenon that occurs in choke points in wireless sensor networks causing congestion and packets loss.

04/2003 – 08/2004: INFO-COM Dept, University of Rome “la Sapienza”, Rome, Italy
Research Assistant under the supervision of Prof. Francesca Cuomo.

- Study and implementation of solutions to improve Quality of Service in 802.11 Wireless LAN networks.
- Study of the challenges to integrate Digital Video Broadcasting and UMTS within the European project *ePerSpace* – Towards the Era of Personal Services at Home and Everywhere.

PUBLICATIONS

Emiliano Miluzzo, James M. H. Oakley, Hong Lu, Nicholas D. Lane, Ronald A. Peterson, Andrew T. Campbell, “Evaluating the iPhone as a Mobile Platform for People-Centric Sensing Applications”, In Proc. of *Intl Workshop on Urban, Community, and Social Applications of Networked Sensing Systems (UrbanSense08)*, Raleigh, NC, USA, Nov. 4, 2008.

Emiliano Miluzzo, Nicholas D. Lane, Kristóf Fodor, Ronald A. Peterson, Hong Lu, Mirco Musolesi, Shane B. Eisenman, Xiao Zheng, Andrew T. Campbell, “Sensing Meets Mobile Social Networks: The Design, Implementation and Evaluation of the CenceMe Application”, In Proc. of *6th ACM Conference on Embedded Networked Sensor Systems (SenSys '08)*, Raleigh, NC, USA, Nov. 5-7, 2008.

Andrew T. Campbell, Shane B. Eisenman, Kristóf Fodor, Nicholas D. Lane, Hong Lu, **Emiliano Miluzzo**, Mirco Musolesi, Ronald A. Peterson and Xiao Zheng, “Transforming the Social Networking Experience with Sensing Presence from Mobile Phones”, (Demo Abstract) In Proc. of *6th ACM Conference on Embedded Networked Sensor Systems (SenSys '08)*, Raleigh, NC, USA, Nov. 5-7, 2008.

Emiliano Miluzzo, Nicholas D. Lane, Andrew T. Campbell, and Reza Olfati-Saber, “CaliBree: a Self-Calibration System for Mobile Sensor Networks”, In Proc. of *International Conference on Distributed Computing in Sensor Networks (DCOSS 2008)*, Santorini Island, Greece, June 11-14, 2008.

Andrew T. Campbell, Shane B. Eisenman, Nicholas D. Lane, **Emiliano Miluzzo**, Ronald Peterson, Hong Lu, Xiao Zheng, Mirco Musolesi, Kristof Fodor, Gahng-Seop Ahn, “The Rise of People-Centric Sensing”, In *IEEE Internet Computing Special Issue on Mesh Networks*, 2008.

Andrew T. Campbell, Shane B. Eisenman, Kristóf Fodor, Nicholas D. Lane, Hong Lu, **Emiliano Miluzzo**, Mirco Musolesi, Ronald A. Peterson, and Xiao Zheng, “CenceMe: Injecting Sensing Presence into Social Network Applications using Mobile Phones”, (Demo Abstract) In Proc. of *Ninth ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc '08)*, Hong Kong, May 27-30, 2008.

Mirco Musolesi, **Emiliano Miluzzo**, Nicholas D. Lane, Shane B. Eisenman, Tanzeem Choudhury, Andrew T. Campbell, “The Second Life of a Sensor: Integrating Real-world Experience in Virtual Worlds using Mobile Phones”, In Proc. of *Fifth Workshop on Embedded Networked Sensors (HotEmNets 2008)*, June 2008, Charlottesville, Virginia, USA.

Emiliano Miluzzo, Xiao Zheng, Kristóf Fodor, Andrew T. Campbell, “Radio Characterization of 802.15.4 and its Impact on the Design of Mobile Sensor Networks”, In Proc. of *Fifth European Conference on Wireless Sensor Networks (EWSN 2008)*, Bologna, Italy, Jan. 30/31 - Feb 1, 2008.

Andrew T. Campbell, Shane B. Eisenman, Kristóf Fodor, Nicholas D. Lane, Hong Lu, **Emiliano Miluzzo**, Mirco Musolesi, Ronald A. Peterson, and Xiao Zheng, “CenceMe: Injecting Sensing Presence into Social Network Applications using Mobile Phones”, (Demo Abstract) In Proc. of *Ninth Workshop on Mobile Computing Systems and Applications (HotMobile 2008)*, Silverado Resort, Napa Valley, CA, USA, Feb. 25-26, 2008.

Nicholas D. Lane, Shane B. Eisenman, Mirco Musolesi, **Emiliano Miluzzo**, Andrew T. Campbell, “Urban Sensing Systems: Opportunistic or Participatory?”, In Proc. of *Ninth Workshop on Mobile Computing Systems and Applications (HotMobile 2008)*, Silverado Resort, Napa Valley, CA, USA, Feb. 25-26, 2008.

Emiliano Miluzzo, Nicholas D. Lane, Shane B. Eisenman, Andrew T. Campbell, “CenceMe - Injecting Sensing Presence into Social Networking Applications”, (Invited paper) In *Proc. of Second European Conference on Smart Sensing and Context (EuroSSC 2007)*, Lake District, UK, October 23-25, 2007.

Shane B. Eisenman, **Emiliano Miluzzo**, Nicholas D. Lane, Ronald A. Peterson, Gahng-Seop Ahn, Andrew T. Campbell, “The BikeNet Mobile Sensing System for Cyclist Experience Mapping”, In *Proc. of Fifth ACM Conference on Embedded Networked Sensor Systems (SenSys 2007)*, Sydney, Australia, Nov. 6-9, 2007.

Nicholas D. Lane, Shane B. Eisenman, **Emiliano Miluzzo**, Mirco Musolesi, Andrew T. Campbell, “Urban Sensing: Opportunistic or Participatory?”, Presented at *First Workshop Sensing on Everyday Mobile Phones in Support of Participatory Research*, Sydney, Australia, November 6, 2007.

Gahng-Seop Ahn, **Emiliano Miluzzo**, Andrew T. Campbell, Se Gi Hong and Francesca Cuomo, “Funneling-MAC: A Localized, Sink-Oriented MAC For Boosting Fidelity in Sensor Networks”, In *Proc. of Fourth ACM Conference on Embedded Networked Sensor Systems (SenSys 2006)*, Boulder, Colorado, USA, Nov. 1-3, 2006.

Gahng-Seop Ahn, **Emiliano Miluzzo**, Andrew T. Campbell, “A Funneling-MAC for High Performance Data Collection in Sensor Networks”, (Demo Abstract), In *Proc. of Fourth ACM Conference on Embedded Networked Sensor Systems (SenSys 2006)*, Boulder, Colorado, USA, Nov. 1-3, 2006.

Emiliano Miluzzo, Nicholas D. Lane, and Andrew T. Campbell, “Virtual Sensing Range”, (Poster Abstract), In *Proc. of Fourth ACM Conference on Embedded Networked Sensor Systems (SenSys 2006)*, Boulder, Colorado, USA, Nov. 1-3, 2006.

Shane B. Eisenman, Nicholas D. Lane, **Emiliano Miluzzo**, Ronald A. Peterson, Gahng-Seop Ahn, and Andrew T. Campbell, “Metrosense Project: People-Centric Sensing at Scale”, In *Proc. of First Workshop on World-Sensor-Web (WSW 2006)*, Boulder, Colorado, USA, Oct. 31, 2006.

Andrew T. Campbell, Shane B. Eisenman, Nicholas D. Lane, **Emiliano Miluzzo**, Ronald Peterson, “People-Centric Urban Sensing”, (Invited Paper), In *Proc. of Second ACM/IEEE Annual International Wireless Internet Conference (WICON 2006)*, Boston, USA, August 2-5, 2006.

COMMITTEE

Panel Co-Chair of First ACM MobiHoc S3 Workshop, co-located with ACM MobiHoc 2009.

INDUSTRY

04/2002 – 04/2003: SIEMENS Mobile Communications, Milan, Italy.
Intern under the mentorship of Dr. Giovanna De Zen

- Study of the challenges to integrate and achieve interoperability between Wireless LAN 802.11 and 3G UMTS cellular networks.
- Development and testing, using C and C++, of an experimental platform to authenticate and authorize a Wireless LAN client to a cellular network server via a 802.11 access link.

TEACHING

04/2007 – 06/2007: Department of Computer Science, Dartmouth College, Hanover, NH, USA
Teaching Assistant for the undergraduate course “Computer Networks” in the Computer Science Department.

COMPUTER SKILLS

Languages and Packages: ObjectiveC, nesC, C/C++, Visual C++, Java/JME, php, bash, perl, Microsoft Office, Open Office, LaTeX.

Development Environments: Xcode, Eclipse.

OS: IBM PC (DOS, Windows), UNIX, MacOS, Linux, Solaris, TinyOS.

LANGUAGES

Italian: native speaker.

English: fluent.