

# MARIA A. KAZANDJIEVA

mariakaz@cs.stanford.edu  $\diamond$  <http://sing.stanford.edu/maria>

## AREAS OF INTEREST

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energy-efficiency in computing systems, wireless sensor networks, power data analysis

## EDUCATION

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### Stanford University

Ph. D. Candidate in Computer Science

M.S. in Computer Science

*September 2007 — present (exp. Sept 2013)*

*June 2009*

### Mount Holyoke College

B.A. in Computer Science, Magna Cum Laude

Minor in Mathematics

*September 2003 — December 2006*

## EXPERIENCE

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### Stanford University

*Ph.D. Candidate*

September 2007 - Present

*Stanford, CA*

- **Anyware** – a low-power hybrid compute architecture to combine the benefits of thin clients with the local compute resources of PCs.
- **PowerNet** – a building-scale sensing infrastructure for measuring and understanding the energy usage of compute systems. Over 200 plug-level meters track per-device power draw consumption, while software monitors gather utilization data.
- **Contact Graphs** – design and setup a 1000-node low-power wireless network to track the real-world social contacts within a high school. The collected data is used to improve simulation of influenza spread during epidemi.
- **Wireless Links** – understand effects of low-level wireless network properties such as temporal correlation of packet reception. Investigate affect of such bursitness on TCP.

### Princeton University

*Research Staff*

Feb - Aug 2007

*Princeton, NJ*

- **Mars** – Evaluate efficient interprocess communication methods for mobile phones
- **SARANA** – a Spatially Aware, Resource Aware Network Architecture that examines to leverage existing mobile computing infrastructures to run large scale, spatially aware applications.

### Princeton University

*Research Intern*

June - Aug 2006

*Princeton, NJ*

- Study resource price formation and effect on resource sharing in mobile networks, including lightweight economic models

## PUBLICATIONS

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1. Omprakash Gnawali, Rodrigo Fonseca, Kyle Jamieson, *Maria Kazandjieva*, David Moss, Phil Levis  
**CTP: An Efficient, Robust, Reliable Collection Tree Protocol for Wireless Sensor Networks**  
To appear in the ACM Transactions on Sensor Networks (TOSN), 2013.
2. *Maria Kazandjieva*, Brandon Heller, Omprakash Gnawali, Philip Levis, and Christos Kozyrakis.  
**Measuring and Analyzing the Energy Use of Enterprise Computing Systems.**  
To appear in the Journal of Sustainable Computing, 2013.
3. *Maria Kazandjieva*, Brandon Heller, Omprakash Gnawali, Philip Levis, and Christos Kozyrakis.  
**Green Enterprise Computing Data: Assumptions and Realities.**  
In Proceedings of the Third International Green Computing Conference (IGCC), 2012.
4. Marcel Salathé, *Maria Kazandjieva*, Jung Woo Lee, Phil Levis, Marcus Feldman, and James Jones.  
**A High-Resolution Human Contact Network for Infectious Disease Transmission.**  
In Proceedings of the National Academy of Sciences (PNAS), December 13, 2010.
5. Jung Il Choi, Mayank Jain, *Maria Kazandjieva*, and Philip Levis.  
**Granting Silence to Avoid Wireless Collisions.**  
In Proceedings of the 18th IEEE International Conference on Network Protocols (ICNP), 2010
6. *Maria Kazandjieva*, Jung Woo Lee, Marcel Salathe, Marcus Feldman, James Jones, Philip Levis.  
**Experiences in Measuring a Human Contact Network for Epidemiology Research.**  
ACM Workshop on Hot Topics in Embedded Networked Sensors (HotEmNets), 2010.
7. Jung Il Choi, *Maria Kazandjieva*, Mayank Jain, and Philip Levis.  
**The Case for a Network Protocol Isolation Layer.**  
In Proceedings of the 7th Conference on Embedded Networked Sensor Systems (SenSys), 2009.
8. *Maria Kazandjieva*, Brandon Heller, Philip Levis, and Christos Kozyrakis.  
**Energy Dumpster Diving.**  
In the Second Workshop on Power Aware Computing (HotPower), 2009.
9. Yang Chen, Omprakash Gnawali, *Maria Kazandjieva*, Philip Levis, and John Regehr.  
**Surviving Sensor Network Software Faults.**  
In Proceedings of the 22nd ACM Symposium on Operating System Principles (SOSP), 2009.
10. Kannan Srinivasan, *Maria Kazandjieva*, Saatvik Agarwal, and Philip Levis.  
**The Beta Factor: Measuring Wireless Link Burstiness.**  
Proceedings of the 6th ACM Conference on Embedded Networked Sensor Systems (SenSys), 2008.
11. *Maria Kazandjieva* and Margaret Martonosi.  
**Mars: Portable and Efficient Interprocess Communication for Cellular Phones.**  
Sensing on Everyday Mobile Phones in Support of Participatory Research, SenSys, 2007.

## POSTERS AND DEMOS

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1. *Maria Kazandjieva*, Omprakash Gnawali, and Philip Levis.  
**Visualizing Sensor Network Data with Powertron.**  
In proceedings of the 8th ACM Conference on Embedded Networked Systems (SenSys) 2010
2. Kannan Srinivasan, *Maria Kazandjieva*, Mayank Jain, Eddie Kim, and Philip Levis.  
**SWAT: Enabling Wireless Network Measurements.**  
Demo in ACM SenSys, 2008. Demo in ACM SIGCOMM 2009.
3. *Maria Kazandjieva* and Margaret Martonosi.  
**Lightweight Economic Model for Resource Sharing in Wireless Networks.**  
Poster in ACM SIGCSE 2007 Student Research Competition.  
Second Place Award in ACM Grand Finals Undergraduate Category.

4. Denitsa Tilkidjieva, Nilanjan Banerjee, *Maria Kazandjieva*, Sami Rollins, Mark D. Corner.  
**Llama: An Adaptive Strategy for Performing Background Tasks on Mobile Devices.**  
Poster in 7th IEEE Workshop on Mobile Computing Systems and Applications (WMCSA 2006).

## AWARDS

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- Google Anita Borg Scholarship Finalist, May 2009
- Stanford Computer Forum Fellowship, September 2007
- ACM Grand Finals, Undergraduate Category, Second Place, June 2007
- SIGCSE 07 Student Research Competition, Second Place, March 2007
- Starr Scholar, C.V. Foundation, February and September 2006
- CRA-W Distributed Mentor Project, Summer 2005 and Summer 2006
- Howard Hughes Medical Institute Research Fellowship, Summer 2006
- Sarah Williston Scholar, October 2005
- Mildred L. Sanderson Prize for Excellence in Mathematics, May 2004

## TECHNICAL SKILLS

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|                                 |   |
|---------------------------------|---|
| <b>Programming Languages</b>    | Python, C, nesC, Java, bash scripting, Javascript |
| <b>Operating Systems</b>        | Linux, Mac OS, Tiny OS                            |
| <b>Visualization Frameworks</b> | Protovis, Flare, Matplotlib                       |
| <b>Data</b>                     | MySQL, MapReduce                                  |
| <b>Statistical Software</b>     | R   |
| <b>Tools</b>                    | Git, Vim, VirtualBox, Amazon EC2                  |