

# Ian Rose

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Software engineer with diverse experience in industry, academia and research labs seeks a challenging and engaging development position. Particular expertise in distributed system design, backend server development and wireless networking (802.11 and 802.15.4).

## Education

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**PhD, Computer Science** 2005 - 2011  
Harvard University

- Dissertation: *Real-Time Query Systems for Complex Data Sources*
- Dissertation committee: Matt Welsh (advisor), Jim Waldo, Margo Seltzer
- Conducted research on distributed systems for outdoor wireless network monitoring (*Argos*), decentralized algorithms for resource-sharing in wireless sensor networks (*Desync*), and internet-scale query systems (*Cobra*).
- Teaching fellow for three different semester-long graduate-level classes.

**MS, Computer Science** 2005 - 2008  
Harvard University

**AB, Computer Science** 1996 - 2000  
Dartmouth College

- Second Honor Group (GPA in top 15% of class) for '99-'00 academic year.
- Completed all pre-medicine course requirements.

## Experience

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**Software Engineer** 2012 - present  
Monetology

- Early-stage employee at a startup reinventing marketing resource management (MRM) software.
- Particular emphasis on server, backend, and database development.

**Software Engineer** 2011 - 2012  
Google, Inc.

- Member of a large team that developed an internal product for collaborative document editing.
- Designed and developed a lock service to allow coordination and management of user sessions across backend servers.
- Member of a 3-person team that designed and developed a highly-scalable, resilient, distributed backend server tier, running in data centers across two continents.
- Interfaced with a variety of Google infrastructure systems, including Megastore, BigTable, Stubby (RPC), App Engine, and numerous internal-only systems.

**Graduate Research Intern** Summer, 2007  
Sun Microsystems

- Interned with Sun Labs on Project Darkstar, an open-source application server for online games and other latency-sensitive applications.
- Implemented a C API library, allowing existing C/C++ based game-client engines to interface with the Java-based Darkstar servers.

### Senior Software Design Engineer

2000 - 2005

MicroStrategy & Alarm.com

- Played an instrumental role in developing a novel wireless home security offering, from a early concept to a growing, active business.
- Created and maintained customer website (www.alarm.com) to provide customers with secure, remote monitoring and control of their security system.
- Developed an application to securely report intrusion alarms to business partners' central station facilities for forwarding to emergency response personnel.

### Undergraduate Research Student

1998 - 1999

Los Alamos National Laboratory

- Participated in a selective program for science and mathematics internships in research and education, advised by Dr. Irving J. Bigio.
- Performed independent research on cancer detection, using neural network and statistical clustering techniques to classify spectral measurements of tissues.

## Skills

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- Programming languages: Java, C, C++, Python, JavaScript, Perl, shell scripting
- Web development experience: HTML, CSS, AJAX
- Experienced in Linux and FreeBSD development and system utilities
- Database programming experience: PostgreSQL, MySQL, Microsoft SQL Server
- Designed, deployed and maintained a 26-node outdoor wireless mesh in a complex urban setting
- Embedded system development with TinyOS on the TelosB low-power wireless mote platform
- Experience using computational testbeds, including Emulab, PlanetLab and MoteLab

## Publications

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"Mapping the Urban Wireless Landscape with Argos". Ian Rose and Matt Welsh. *In Proceedings of the 8th ACM Conference on Embedded Networked Sensor Systems (SenSys '10)*, Nov 2010.

"CitySense: An Urban-Scale Wireless Sensor Network and Testbed". Rohan Murty, Geoffrey Mainland, Ian Rose, Atanu Roy Chowdhury, Abhimanyu Gosain, Josh Bers, and Matt Welsh. *In Proceedings of the 2008 IEEE International Conference on Technologies for Homeland Security*, May 2008.

"Cobra: Content based Filtering and Aggregation of Blogs and RSS Feeds". Ian Rose, Rohan Murty, Peter Pietzuch, Jonathan Ledlie, Mema Roussopoulos, and Matt Welsh, *In Proceedings of the 4th USENIX Symposium on Networked Systems Design & Implementation (NSDI '07)*, April 2007.

"DESYNC: Self-Organizing Desynchronization and TDMA on Wireless Sensor Networks". Julius Degesys, Ian Rose, Ankit Patel, and Radhika Nagpal, *In Proceedings of the 6th International Conference on Information Processing in Sensor Networks (IPSN '07)*, April 2007.

“Diagnosis of breast cancer using elastic-scattering spectroscopy: preliminary clinical results”. Irving J. Bigio, Stephen G. Bown, Gavin Briggs, Christine Kelley, Sunil Lakhani, David Pickard, Paul M. Ripley, Ian G. Rose, and Christobel Saunders. *Journal of Biomedical Optics*, Volume 5, Issue 2, April 2000.

## **Honors & Awards**

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- Robert L. Wallace Prize Fellowship, 2006-2007, Harvard University
- Grosswirth-Salny Scholarship, 1999, the American Mensa Education and Research Foundation