# Kevin F. Eustice

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## Education

***University of California, Los Angeles***
**Ph.D. in Computer Science** **anticipated March 2008**

**Laboratory for Advanced Systems Research**
*Advisors*: Dr. Leonard Kleinrock and Dr. Peter Reiher
*Major Field*: Distributed and Mobile Computing
*Minor Fields*: Artificial Intelligence, Computer Networks

*Dissertation Title:* Panoply—Active middleware for managing ubiquitous computing interactions

Panoply is middleware that assists developers in quickly developing ubiquitous computing applications that leverage location, social groupings, as well as user and application interests. Additionally, Panoply drastically simplifies device management by handling network configuration, secure mediation of interactions, and dynamic discovery and coordination within diverse network environments. The device community model that is at the heart of Panoply simplifies application development and improves application scalability and security. Using Panoply, I have developed a number of interesting applications, including 1) the Smart Party—a location-aware social multimedia application, 2) a group-driven locative media application, and 3) a secure mobile device quarantine and update management solution.

***University of California, Los Angeles***
**M.S. in Computer Science** **June 2002**

***Harvey Mudd College, Claremont, CA***
**B.S. in Computer Science (Honors)** **June 1999**

## Research Interests

Ubiquitous computing, intelligent environments, home networking, consumer multimedia, mobile systems, social media, peer-to-peer systems, human-computer interactions, network security

## Employment

***UCLA Laboratory for Advanced Systems Research***
**Graduate Student Researcher and Panoply Team Lead** **June 1999-present**

*Past Experience:* In addition to dissertation research, past projects include: researching new QoS metrics for dissuading users from certain activities, new mechanisms for tying user data to specific environments, developing Linux kernel modules for TCP interception, developing a file tracing system for internal lab use, development of an active-network based adaptation protocol for multimedia, security for layered media, mobile extensions to sensor network directed diffusion routing, a statistical natural language-based email categorization system

*Technical Management*: As senior graduate student and lead developer on the NSF funded Panoply project, I have organized and managed a team ranging from three to five other graduate students. I have mentored a dozen masters students through successful completion of their various M.S. projects.

***Independent Contractor*** **2001-present**

Developed tests and network performance tools to measure performance of client's enterprise-scale service. Developed tools to measure semantic similarity of different pieces of text. Redesigned and optimized existing

tools to rapidly parse and dissect large textual data sets. Performed black-box analysis of software and network protocols. Developed network and security solutions for a variety of different clients.

***Intel Corporation, Hillsboro, OR***
**Graduate Technical Intern** **June 2004-September 2004**

Participated in design and development of next-generation secure wireless network setup technology intended to provision security credentials to newly added devices, both in home and enterprise environments. Developed cryptographic modules for Windows and Windows CE clients. Integrated with existing COTS web server to allow utilization of provisioned cryptographic credentials. Assisted with development of architectural proposal for standards-track submission.

***The Aerospace Corporation, El Segundo, CA***
**Graduate Intern** **June 1999 - August 2003**

Developed intrusion detection and penetration packages for monitoring and evaluating system security. Developed a high-security operating environment using COTS multi-level security technology. Designed a next-generation Linux honeypot system and next-generation attack deflection software. Designed an adaptive security system to react to detected threats in a distributed system.

***IBM Research, Almaden Research Center, San Jose, CA***
**Research Intern** **May 1998-May 1999**

Developed a system to allow access to a variety of intranet/internet services via mobile (PalmPilot et. al) clients. Designed a XML-based language for describing interfaces for a variety of consumer devices, and developed a transmission mechanism for these interfaces based on IBM's TSpaces, a Java-based tuplespace. Research included database and user interface issues.

***Harvey Mudd Clinic, sponsored by IBM Almaden Research***
**Team Leader** **August 1997-May 1998**

Developed a suite of front-end information clients for IBM's state of the art intranet data search and retrieval system: Grand Central Station. Targets were Lotus Notes, handheld pagers, and the 3Com PalmPilot. Additionally wrote Boolean parser for Grand Central Station. Managed team of four other students through successful completion of project.

***Harvey Mudd College Computer Science Department, Claremont, CA***
**System Administration Staff Member** **May 1996-May 1999**

Administered, configured, and maintained computer science department SGI, Sun, and PC machines. Ported and enhanced Solaris system utilities. Was responsible for security and X11 maintenance on the cluster, as well as managing student consultants. Managed a user base of 400+ users.

***Computing Devices International (Ceridian Corporation), Bloomington, MN***
**Software Engineering Intern** **May 1997-September 1997**

Developed state of the art prototype system architecture for Naval F/18s, overlaying legacy equipment with COTS components, in conjunction with Cambridge Research Laboratories, and McDonnell Douglas/Boeing. Focused on developing an OpenGL graphics distribution system in CORBA for VxWorks target platforms.

## Skills and Languages

*Familiar Languages:* Java, C, C++, Python
*Familiar Operating Systems:* Linux, Solaris, Windows, MacOS X, VxWorks, PalmOS;
*Specialized Knowledge:* localization systems, mobile systems, systems security, network configuration, Linux kernel development, test-driven development, streaming multimedia including MPEG and wavelet codecs,

embedded development, multi-threading, network programming, distributed systems design, CORBA, SOAP, HTML, SQL, XML, Java/JNI, Hadoop, MySQL;
*Frequently Used Tools:* CVS, SVN, Eclipse, Ant, JUnit, Jmeter, MS Visual Studio

## Selected Publications

Peter Reiher, Kevin Eustice, V. Ramakrishna, "Security and Privacy for Pervasive Computing Environments." *Security and Privacy in Mobile and Wireless Networking.* Troubadour Publishing, to be published in 2008.

Kevin Eustice, V. Ramakrishna, Nam Nguyen, and Peter Reiher, "The Smart Party: A Personalized Location-aware Multimedia Experience," to appear in the *Proceedings of the Fifth IEEE Consumer Communications and Networking Conference (CCNC 2008).*

Matthew Beaumont-Gaye, Kevin Eustice, and Peter Reiher, "Information Protection via Environmental Data Tethers," *Proceedings of the New Security Paradigms Workshop (NSPW) 2007.*

Kevin Eustice, V. Ramakrishna, Matthew Schnaider, Nam Nguyen, Alison Walker, Peter Reiher, "nan0Spheres: Location-Driven Fiction for Nomadic User Groups," *Proceedings of the 2007 International Conference on Human Computer Interaction (HCII'07).*

V. Ramakrishna, Kevin Eustice, and Matthew Schnaider, "Approaches for Ensuring Security and Privacy in Unplanned Ubiquitous Computing Interactions." *Mobile and Wireless Network Security and Privacy.* Ed. Makki et al. 2007.

V. Ramakrishna, Kevin Eustice, and Peter Reiher, "Negotiating Agreements Using Policies in Ubiquitous Computing Scenarios," *Proceedings of the 2007 IEEE International Conference on Service-Oriented Computing and Applications (SOCA 2007).*

V. Ramakrishna, Max Robinson, Kevin Eustice and Peter Reiher, "An Active Self-Optimizing Multiplayer Gaming Architecture," *Cluster Computing Journal*, Vol. 9, No. 2, 2006.

V. Ramakrishna, Kevin Eustice, and Matthew Schnaider, "Approaches for Ensuring Security and Privacy in Unplanned Ubiquitous Computing Interactions," *Proceedings of the 2006 Intl. Workshop on Security and Privacy for Wireless and Mobile Networks.*

Everett Anderson, Kevin Eustice, Shane Markstrum, Mark Hansen, and Peter Reiher, "Mobile Contagion: Simulation of Infection and Disease," *Proceedings of Symposium on Measurement, Modeling, and Simulation of Malware, June 2005.*

Kevin Eustice, Leonard Kleinrock, Shane Markstrum, Gerald Popek, V. Ramakrishna and Peter Reiher, "WiFi Nomads and their insecure devices: The Case for Quarantine, Examination, and Decontamination," *Proceedings of the New Security Paradigms Workshop (NSPW) 2003.* **Selected as one of four "Highlight Papers of NSPW 2003" and presented at ACSAC 2003**.

Kevin Eustice, Leonard Kleinrock, Shane Markstrum, Gerald Popek, V. Ramakrishna and Peter Reiher, "Enabling Secure Ubiquitous Interactions," *Proceedings of the International Workshop on Middleware for Pervasive and Ad hoc Computing (MPAC)* held in conjunction with *Middleware 2003.*

V. Ramakrishna, Max Robinson, Kevin Eustice and Peter Reiher, "An Active Self-Optimizing Multiplayer Gaming Architecture," *Proceedings of the Adaptive Middleware Services Workshop (AMSW) 2003.*

Vincent Ferreria, Alexey Rudenko, Kevin Eustice, Richard Guy, V. Ramakrishna and Peter Reiher, "Panda: Middleware to Provide the Benefits of Active Networks to Legacy Applications," *Proceedings of DANCE 02*, May 2002.

Mark Yarvis, Peter Reiher, Kevin Eustice, and Gerald J. Popek. Conductor: Enabling distributed adaptation. UCLA Tech Report CSD-TR-010025, June 2001.

Peter Reiher, Kevin Eustice and Kai-Min Sung, "Adapting Encrypted Data Streams in Open Architectures," *Proceedings of the Adaptive Middleware Services Workshop (AMSW) 2001*, August 2001.

Kevin Eustice, Toby Lehman, Armando Morales, Michelle Munson, Stefan Edlund and Miguel Guillen. “A Universal Information Appliance,” IBM Systems Journal, 1999.

## Awards

National Merit Scholar, United States Air Force Type I Scholarship, Conexant Graduate Scholarship, Chorafas Foundation Scholarship

## Patents

U.S. 6,292,186 K. F. Eustice, T. J. Lehman, and A. G. Morales: **“***Universal information appliance with parser.”*

## Professional Activities

Co-chair of the 1st International Workshop on Social Aspects of Ubiquitous Computing Environments (SAUCE), co-occuring with the 4th International Conference on Wireless and Mobile Computing, Networking, and Communications (WiMob 2008).