

Baskin School of Engineering  
Department of Computer Science  
University of California, Santa Cruz

**Jeff LeFevre**

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### **Research Objective**

I have research interests in IO performance, storage networks, file and storage systems, and data encoding and analysis.

### **Education**

PhD Student, Computer Science  
University of California, Santa Cruz  
Storage Systems Research Center  
Advisor: Darrell Long

MS Computer Science  
University of California, San Diego  
Thesis: "Improving disk array performance and reliability"  
Advisor: Walt Burkhard

BS Computer Science  
Focus: DNA encoding methods for computation  
University of South Florida

### **Teaching Experience**

Teaching Assistant, CMPS 111 Operating Systems, UCSC Fall 2008

### **Professional Experience**

Google, Mountain View, CA  
Software Engineer, Intern: summer 2007, 2008, 2009  
Systems software

- Collection and analysis of storage subsystems data to determine performance trends of Google platforms
- Enhancements to disk SMART data collection and analysis
- Disk performance and reliability qualification

Teradata Labs, San Diego, CA  
Software Engineer, Intern: summer 2005, 2006  
Storage virtualization group

- Design and coding of fast, scalable method for characterization of heterogeneous storage systems, used for initial data placement
- Filed invention disclosure for methodology
- Participated in architectural design phase and wrote internal white paper for automated storage virtualization system

San Diego Supercomputer Center at UCSD  
Worldwide Protein Data Bank ([www.pdb.org](http://www.pdb.org))

Student team leader for systems testing, fall 2004 – spring 2005

- Design and coding of system for automating services monitoring, restart, and notification/fail-over of main PDB web servers for high traffic scientific data

CitrusToGo.com, Tampa, FL

Co-Founder, 1998 - 2002

- Established and managed [www.CitrusToGo.com](http://www.CitrusToGo.com) for online sales of Florida gift fruit

### **Publications**

D. Kephart, J. LeFevre, “CodeGen: The Generation and Testing of DNA Code Words,” *IEEE Congress on Evolutionary Computation*, Portland, OR, June 2004.

### **Honors and Professional Activities**

- University of California Regent's Fellowship 2008
- Tau Beta Pi Engineering Honor Society
- Student Engineer of the Year 2003 – IEEE CS Florida West Coast Section
- Outstanding Student Chapter of the Year 2003 (USF), IEEE Worldwide
- Officer: Tau Beta Pi 2004, IEEE CS Student Chapter 2003
- Member IEEE, ACM

### **Significant Software Projects**

RAIDframe disk array simulator

- MS Thesis work: created new data layout, scheduling policies, and load balancing; also designed and implemented immediate and eventual consistency policies for writes. Enhancements of simulator to add disk array cache, more flexible IO scheduling, and multiple tagged IO queues.

Simulator for reduce phase of MapReduce to investigate load balancing for reduce operators

- Event-based client server architecture for highly scalable, distributed computation and job process management
- Created and tested load balancing algorithms for Reduce operators over heterogeneous clients, with dynamic response to slow or failed clients

New TCP protocol for wireless applications

- Linux Kernel: modified TCP performance & behavior for wireless links based on signal strength and layer 2 retransmission rate information
- Wireless network card driver: modifications to support kernel TCP changes

Real-time wireless signal strength mapping using a Roomba

- Interfaced with a “Roomba” previously mounted with Linux and wireless card
- Created a web server and client application to control or autonomously drive and map out wireless signal strength across several channels in a given area, with live signal strength mapping in 2D

### **Technical Skills**

- C, C++, Python, Matlab, some Java