

# Andrew Krioukov

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EDUCATION	2008 - Present <b>PhD Computer Science</b> Advisor: David Culler <ul style="list-style-type: none"><li>NSF Graduate Research Fellowship</li></ul>	University of California-Berkeley	Berkeley, CA Overall GPA: 4.00
	2004 - 2008 <b>BS Computer Engineering, Computer Science &amp; Math</b> <ul style="list-style-type: none"><li>Claude and Dora Richardson Scholarship for Excellence in Electrical &amp; Computer Engineering</li></ul>	University of Wisconsin-Madison	Madison, WI Major/Overall GPA: 3.86/3.57
PUBLICATIONS	<b>NapSAC: Design and Implementation of a Power-Proportional Web Cluster</b> Andrew Krioukov, Prashanth Mohan, Sara Alspaugh, Laura Keys, David Culler, Randy Katz. <i>Proceedings of the First ACM SIGCOMM Workshop on Green Networking</i> , New Delhi, India, Aug 2010. <a href="http://cs.berkeley.edu/~krioukov/NapSAC.pdf">http://cs.berkeley.edu/~krioukov/NapSAC.pdf</a>		
	<b>Power Optimization – a Reality Check</b> Stephen Dawson-Haggerty, Andrew Krioukov, David Culler. <i>EECS Department, University of California, Berkeley, Tech. Rep. UCB/EECS-2009-140</i> , Oct. 2009. <a href="http://cs.berkeley.edu/~krioukov/realityCheck.pdf">http://cs.berkeley.edu/~krioukov/realityCheck.pdf</a>		
	<b>Avoiding File System Micromanagement with Range Writes</b> Ashok Anand, Sayandeep Sen, Andrew Krioukov, Florentina Popovici, Aditya Akella, Andrea Arpaci-Dusseau, Remzi Arpaci-Dusseau, and Suman Banerjee. <i>Proceedings of the 8th USENIX Symposium on Operating Systems Design and Implementation (OSDI'08)</i> , San Diego, CA, Dec 2008. <a href="http://cs.berkeley.edu/~krioukov/rangeWrites.pdf">http://cs.berkeley.edu/~krioukov/rangeWrites.pdf</a>		
	<b>Clustera: An Integrated Computation and Data Management System</b> David DeWitt, Eric Robinson, Srinath Shankar, Erik Paulson, Jeffrey Naughton, Andrew Krioukov, Joshua Royalty. <i>Proceedings of the 34th International Conference on Very Large Data Bases (VLDB'08)</i> , Auckland, New Zealand, Aug 2008. <a href="http://cs.berkeley.edu/~krioukov/clustera.pdf">http://cs.berkeley.edu/~krioukov/clustera.pdf</a>		
	<b>Parity Lost and Parity Regained</b> Andrew Krioukov, Lakshmi N. Bairavasundaram, Garth R. Goodson, Kiran Srinivasan, Randy Thelen, Andrea C. Arpaci-Dusseau, Remzi H. Arpaci-Dusseau. <i>Proceedings of the 6th USENIX conference on File and Storage Technologies (FAST'08)</i> , San Jose, CA, Feb 2008. <a href="http://cs.berkeley.edu/~krioukov/parityLost.pdf">http://cs.berkeley.edu/~krioukov/parityLost.pdf</a>		
	<b>A Parallel IEEE P754 Decimal Floating-Point Multiplier</b> Brian J. Hickmann, Andrew Krioukov, Michael J. Schulte, and Mark A. Erle. <i>Proceedings of the 25th IEEE International Conference on Computer Design (ICCD'07)</i> , pp296-303, IEEE, October 2007. <a href="http://cs.berkeley.edu/~krioukov/dflpMult.pdf">http://cs.berkeley.edu/~krioukov/dflpMult.pdf</a>		
TECHNICAL PRESENTATIONS	<b>“Parity Lost and Parity Regained”</b> 6th USENIX Conference on File and Storage Technologies (FAST'08)		
WORK EXPERIENCE	May 2009-Aug 2009 <b>Power-Aware Applications Project</b> Developed techniques to analyze and reduce power consumption in computer systems. Used hardware instrumentation and models based on performance counters to characterize power consumption.	Intel Research	Berkeley, CA
	May 2008-Aug 2008 <b>Platforms Group</b> Developed a tool for analyzing the performance of distributed applications by monitoring RPC calls. Designed map-reduce functions for performing common analyses.	Google Corporation	Mountain View, CA

May 2007-Aug 2007                      Network Appliance Corporation                      Sunnyvale, CA  
*Advanced Technology Group*

**Researched failure policies in enterprise-class file systems through fault injection and model checking.** Worked with UW-Madison Professor Remzi Arpaci-Dusseau to evaluate the reliability of enterprise-class file systems when subject to partial-disk failures.

May 2006-Aug 2006                      IBM Corporation                      Austin, TX  
*ExtremeBlue Lab*

**Designed, implemented and tested a tool to automatically diagnose deep bugs in the Linux kernel.** Developed an application that monitored rare code paths in the kernel. Rare events were analyzed and used to identify potential bugs.

May 2005-Aug 2005                      Thomson-West Corporation                      Eagan, MN  
*Performance Group*

**Developed an efficient data-mining application for an online legal research website.** Designed and programmed an efficient, multi-threaded, data mining application to process log files from many servers.

June 2004-Aug 2004                      Aleks Corporation                      Santa Ana, CA  
*Software Group*

Developed and tested a program to display complex mathematics in a web browser.

RESEARCH  
EXPERIENCE

Jan 2009-Present                      LoCal Project                      UC-Berkeley  
*Energy Efficiency Research*                      *Professor David Culler*

- Examining ways to improve energy efficiency in computer systems through hardware and operating system interface changes.
- Designing energy-efficient server clusters.

Jan 2005-May 2008                      Advanced Systems Laboratory (ADSL)                      UW-Madison  
*File Systems Research*                      *Professor Remzi Arpaci-Dusseau*

- Implemented and evaluated range writes, a disk interface change that improved write performance by up to 35% on standard file system benchmarks. Created an ext3-like file system to take advantage of the new disk interface. Set up and ran experiments.
- Evaluated the reliability of enterprise file systems by designing a fault-injection mechanism and model checker. Discovered cases of potential data loss from single failures in RAID systems.

Sept 2007-May 2008                      UW Database Group                      UW-Madison  
*Distributed Computing Research*                      *Professor David DeWitt*

- Contributed to the design of a high-throughput, distributed computing system that provided support for diverse workloads including map-reduce, BLAST and distributed databases.
- Designed and implemented a workflow-aware distributed file system to optimize performance of both parallel and serial tasks within a workflow.

Jan 2007-May 2007                      Madison Embedded Systems and Architecture Lab (MESA)                      UW-Madison  
*Computer Architecture Research*                      *Professor Michael Schulte*

- Designed and verified a parallel decimal float-point multiplier compliant with IEEE 754R.

TECHNICAL  
QUALIFICATIONS

Programming Languages:

- **C & C++** - Extensive experience including writing formally reviewed code at IBM and Google.
- **Java** - Formal training and practical experience at Thomson-West and for Clustera project.
- **Assembly** - Experience in programming x86 assembly.
- **Perl, Ruby, Python**
- **Verilog**

Web: HTML, JavaScript, Flash, PHP, Perl, Ruby

Linux: **Device Drivers**, Kernel Modules, IPC, Multithreading, **File Systems**

Windows: Device Drivers, Win32 API, MFC

Networking: **Sockets API**, High & Low Level Protocols