Chandra Krintz
Department of Computer Science
University of California, Santa Barbara
ckrintz@cs.ucsb.edu

Vita:

Birth date:	May 23, 1970
Birthplace:	Monticello, Indiana
Gender:	Female
Citizenship:	United States

Research Interests:

My research interests include adaptive optimization of dynamically compiled and interpreted programming languages, language support for emerging virtualization-based systems (e.g. cloud computing), and techniques for efficient interoperation between language runtimes and operating systems. My other interests include projects and programs that mentor, support, and encourage young people from underrepresented groups (especially women!) to consider and pursue computer science.

Education:

University of California **San Diego, CA**
Doctor of Philosophy degree in Computer Science, May 2001
Dissertation Title: Reducing Load Delay to Improve Performance of Internet-Computing Programs
Available as UCSD Technical Report CS2001-0672
Adviser: Brad Calder

University of California **San Diego, CA**
Master of Science degree in Computer Science, June 1998

California State University **Northridge, CA**
Bachelor of Science degree in Computer Science, December 1995
Honors: School of Engineering Outstanding Undergraduate Award

Professional Experience:

University of California, **Santa Barbara, CA**
Associate Professor. (July 2007 - Present)

University of California, **Santa Barbara, CA**
Assistant Professor. (July 2001 - June 2007)

Peer-Reviewed Conference & Workshop Publications:

1. C. Bunch, J. Kupferman, and C. Krintz, Active Cloud DB: A RESTful Software-as-a-Service for Language Agnostic Access to Distributed Datastores, International Conference on Cloud Computing (CloudComp), Oct, 2010
2. M. Wegiel and C. Krintz, Cross-Language, Type-Safe, and Transparent Object Sharing For Co-Located Managed Runtimes, The ACM/SIGPLAN Conference on Object Oriented Programming Systems, Languages, and Applications (OOPSLA), Oct, 2010
3. C. Bunch, N. Chohan, C. Krintz, J. Chohan, J. Kupferman, P. Lakhina, Y. Li, and Y. Nomura (Fujitsu), An Evaluation of Distributed Datastores Using the AppScale Cloud Platform, IEEE International Conference on Cloud Computing, Jul, 2010
4. N. Chohan, C. Castillo, M. Spreitzer, M. Steinder, A. Tantawi, and C. Krintz, See Spot Run: Using Spot Instances for MapReduce Workflows, USENIX HotCloud, Jun, 2010
5. N. Chohan, C. Bunch, S. Pang, C. Krintz, N. Mostafa, S. Soman, and R. Wolski AppScale: Scalable and Open AppEngine Application Development and Deployment, International Conference on Cloud Computing (CloudComp), Oct, 2009
6. N. Mostafa and C. Krintz, Tracking Performance Across Software Revisions, ACM International Conference on Principles and Practice of Programming in Java (PPPJ), Aug, 2009

7. M. Wegiel and C. Krintz, Dynamic Prediction of Collection Yield for Managed Runtimes, ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Mar, 2009
8. S. Soman and C. Krintz and L. Daynes, MTM^2: Scalable Memory Management for Multi-Tasking Managed Runtime Environments, European Conference on Object-Oriented Programming (ECOOP), Jul, 2008
9. M. Wegiel and C. Krintz, XMem: Type-Safe, Transparent, Shared Memory for Cross-Runtime Communication and Coordination, ACM Conference on Programming Language Design and Implementation (PLDI), Jun, 2008
10. R. Wolski, S. Gurun, C. Krintz, and D. Nurmi, Using Bandwidth Data to Make Computation Offloading Decisions, High-Performance Grid Computing Workshop (HPGC) – **invited and peer reviewed**, as part of the International Conference on Parallel and Distributed Processing, Apr, 2008
11. M. Wegiel and C. Krintz, The Mapping Collector: Virtual Memory Support for Generational, Parallel, and Concurrent Compaction, ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Mar, 2008
12. L. Zhang, C. Krintz, and P. Nagpurkar, Supporting Exception Handling for Futures in Java, ACM International Conference on the Principles and Practice on Programming in Java (PPPJ), Sep, 2007
13. L. Zhang, C. Krintz, and P. Nagpurkar, Language and Virtual Machine Support for Efficient Fine-Grained Futures in Java, ACM International Conference on Parallel Architectures and Compilation Techniques (PACT), Sep, 2007
14. P. Nagpurkar, H. Cain, M. Serrano, J. Choi, and C. Krintz, Call-chain Software Instruction Prefetching in J2EE Server Applications, ACM International Conference on Parallel Architectures and Compilation Techniques (PACT), Sep, 2007
15. C. Grzegorczyk, S. Soman, R. Wolski, and C. Krintz, Isla Vista Heap Sizing: Using Feedback to Avoid Paging, ACM International Symposium on Code Generation and Optimization (CGO), Mar, 2007
16. H. Mousa, C. Krintz, L. Youseff, and R. Wolski, VIProf: Vertically Integrated Full-System Performance Profiler, Workshop on Next-Generation Software, Mar, 2007
17. L. Youseff, R. Wolski, B. Gorda, and C. Krintz, Paravirtualization for HPC Systems, XHPC: Workshop on XEN in High-Performance Cluster and Grid Computing, Dec, 2006, **Won (Co-) Best Paper Award!**
18. L. Zhang, C. Krintz, and S. Soman, Efficient Support of Fine-grained Futures in Java, International Conference on Parallel and Distributed Computing and Systems (PDCS), Nov, 2006
19. L. Youseff, R. Wolski, B. Gorda, and C. Krintz, Evaluating the Performance Impact of Xen on MPI and Process Execution For HPC Systems, International Workshop on Virtualization Technologies in Distributed Computing (VTDC), Nov, 2006
20. S. Gurun and C. Krintz, A Run-Time, Feedback-Based Energy Estimation Model For Embedded Devices, International Conference on Hardware-Software Codesign and System Synthesis (CODES+ISSS), Oct, 2006
21. Y. Wen, S. Gurun, N. Chohan, R. Wolski, and C. Krintz, SimGate: Full-System, Cycle-Close Simulation of the Stargate Sensor Network Intermediate Node, International Conference on Embedded Computer Systems: Architectures, MOdeling, and Simulation (IC-SAMOS), Jul, 2006
22. S. Soman, L. Daynes, C. Krintz, Task-Aware Garbage Collection in a Multi-Tasking Virtual Machine, ACM International Symposium for Memory Management (ISMM), Jun, 2006
23. S. Soman and C. Krintz, Efficient and General On-Stack Replacement for Aggressive Program Specialization, International Conference on Programming Languages and Compilers (PLC), Jun, 2006
24. P. Nagpurkar, C. Krintz, M. Hind, P. Sweeney, and V.T. Rajan, Online Phase Detection Algorithms, ACM International Symposium on Code Generation and Optimization (CGO), Mar, 2006
25. C. Krintz and S. Gurun, Remote Performance Monitoring, Dagstuhl Seminar Proceedings – Schloss Dagstuhl Workshop on Automatic Performance Analysis, Apr, 2005
26. S. Gurun and C. Krintz, AutoDVS: An Automatic, General-Purpose, Dynamic Clock Scheduling System for Hand-Held Devices, ACM SIGBED International Conference on Embedded Systems Software (EMSOFT), Sep, 2005

27. H. Mousa and C. Krintz, HPS: Hybrid Profiling Support, ACM SIGARCH ACM International Conference on Parallel Architectures and Compilation Techniques (PACT), Sep, 2005
28. C. Krintz and R. Wolski, Using Phase Behavior in Scientific Application to Guide Linux Operating System Customization, Workshop on Next Generation Software at IPDPS, Apr, 2005
29. P. Nagpurkar, C. Krintz, and T. Sherwood, Phase-Aware Remote Profiling, ACM International Symposium on Code Generation and Optimization (CGO), Mar, 2005
30. S. Soman, C. Krintz, and D. Bacon, Dynamic Selection of Application-specific Garbage Collectors, ACM International Symposium for Memory Management (ISMM), Oct, 2004
31. C. Krintz, Y. Wen, and R. Wolski, Application-level Prediction of Battery Dissipation, ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), Aug, 2004
32. L. Zhang and C. Krintz, Adaptive Code Unloading for Resource-Constrained JVMs, ACM SIGPLAN Conference on Languages, Compilers, and Tools for Embedded Systems (LCTES), Jun, 2004
33. P. Nagpurkar and C. Krintz, Visualization and Analysis of Phased Behavior in Java Programs, ACM International Conference on the Principles and Practice of Programming in Java (PPPJ), Jun, 2004
34. L. Zhang and C. Krintz, Profile-driven Code Unloading for Resource-Constrained JVMs, ACM International Conference on the Principles and Practice of Programming in Java (PPPJ), Jun, 2004
35. S. Gurun, C. Krintz, and R. Wolski, NWSLite: A Light-Weight Prediction Utility for Mobile Devices, ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), Jun, 2004
36. Y. Wen, R. Wolski, and C. Krintz, History-based, Online, Battery Lifetime Prediction for Embedded and Mobile Devices, Workshop on Power-Aware Computer Systems (PACS), Dec, 2003
37. S. Soman, C. Krintz, and G. Vigna, Detecting Malicious Java Code Using Virtual Machine Auditing, 12th USENIX Security Symposium, Aug, 2003
38. S. Sucu and C. Krintz, ACE: A Resource-Aware Adaptive Compression Environment, International Conference on Information Technology: Coding and Computing (ITCC), Apr, 2003
39. C. Krintz, Coupling On-Line and Off-Line Profile Information to Improve Program Performance, in the: ACM International Symposium on Code Generation and Optimization (CGO), Mar, 2003
40. C. Krintz, Improving Mobile Program Performance Through the Use of a Hybrid Intermediate Representation, Workshop on Intermediate Representation Engineering (IRE), Jun, 2002
41. C. Krintz, Using Adaptive Optimization Techniques To Teach Mobile Java Computing, ACM International Conference on Principles and Practice of Programming in Java (PPPJ), Jun, 2002
42. C. Krintz and B. Calder, Dynamic Selection of Compression Formats to Reduce Transfer Delay, High-Performance Distributed Computing (HPDC), Aug, 2001
43. C. Krintz and B. Calder, Using Annotation to Reduce Dynamic Optimization Time, ACM Conference on Programming Language Design and Implementation (PLDI), Jun, 2001
44. C. Krintz and R. Wolski, NwsAlarm: A Tool for Accurately Detecting Resource Performance Degradation, IEEE/ACM Symposium on Cluster Computing and the Grid (CCGRID), May 2001
45. C. Krintz and R. Wolski, JavaNws: The Network Weather Service for the Desktop, JavaGrande, Oct, 2000
46. C. Krintz, B. Calder, and U. Hölzle, Reducing Transfer Delay Using Java Class File Splitting and Prefetching, ACM Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA), Oct, 1999
47. R. Wolski, J. Brevik, C. Krintz, G. Obertelli, N. Spring, and A. Su, Running EveryWare on the Computational Grid, IEEE Supercomputing (SC), Oct, 1999
48. C. Krintz, B. Calder, H. B. Lee, and B. Zorn, Overlapping Execution with Transfer Using Non-Strict Execution for Mobile Programs, ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Oct, 1998
49. B. Calder, C. Krintz, S. John, and T. Austin, Cache-Conscious Data Placement, ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Oct, 1998
50. C. Krintz and S. Fitzgerald, AGAVE: A Visualization Tool for Parallel Programming, In Proceedings of International Association of Science and Technology for Development Conference (IASTED), Oct, 1995

Peer-Reviewed Journal Publications:

1. M. Wegiel and C. Krintz, The single-referent collector: Optimizing compaction for the common case, ACM Transactions on Architecture and Code Optimization (TACO), Vol. 6, Issue 4, No. 15, Oct, 2009
2. L. Zhang and C. Krintz, As-If-Serial Exception Handling Semantics for Java Futures, Elsevier Journal on the Science of Computer Programming, Vol. 74, Issue 5-6, pgs 314-332, 2009
3. S. Gurun, D. Nurmi, R. Wolski, and C. Krintz, On the Efficiency of Computation Offloading, Decision Making Strategies International Journal of High Performance Computing Applications, Vol. 22, No.4, pg460-479, Nov, 2008
4. Ye Wen, Selim Gurun, Navraj Chohan, Rich Wolski, and Chandra Krintz, Accurate and Scalable Simulation of Network of Heterogeneous Sensor Devices, Journal of Signal Processing Systems: Special Issue on Embedded Computer Systems for DSP, Vol 50, No. 2, pg115-136, Springer Science, Feb, 2008
5. S. Gurun and C. Krintz, NWSLite: A General-purpose, Non-parametric Prediction Utility for Embedded Systems, ACM Transactions on Embedded Systems (TECS), Vol. 80, Issue 7, pp 1037-1056, Jul, 2007
6. Y. Wen, S. Gurun, N. Chohan, R. Wolski, and C. Krintz, Accurate and Scalable Simulation of Network of Heterogeneous Sensor Devices, Journal of VLSI Signal Processing Systems, 2007
7. S. Soman and C. Krintz, Application-specific Garbage Collection, Journal of Systems and Software, Volume 80, Issue 7, pp. 1037-1056, Jul, 2007
8. P. Nagpurkar, H. Mousa, C. Krintz, and T. Sherwood, Efficient Remote Profiling for Resource-Constrained Devices, ACM Transactions on Architecture and Code Optimization (TACO), Vol. 3, Number 1, Mar, 2006, pp 1-32
9. P. Nagpurkar and C. Krintz, Phase-Based Visualization and Analysis of Java Programs, Elsevier Science of Computer Programming – Special Issue on Principles Practices and Programming in Java, Vol. 59, Number 1-2, Jan, 2006, pp 64-81
10. C. Krintz and S. Sucu, Adaptive On-The-Fly Compression, IEEE Transactions on Parallel and Distributed Systems (TPDS), Vol. 17, Number 1, Jan, 2006, pp 15-24
11. L. Zhang and C. Krintz, The Design, Implementation, and Evaluation of Adaptive Code Unloading for Resource-Constrained Devices, ACM Transactions on Architecture and Code Optimization (TACO), Vol. 2, Number 2, Jun, 2005, pp 131-164
12. Y. Wen, R. Wolski, and C. Krintz, Online Prediction of Battery Battery Lifetime for Embedded and Mobile Devices, Lecture Notes in Computer Science (LNCS); Springer-Verlag, V3164/2004, Dec, 2004
13. C. Krintz, D. Grove, V. Sarkar, and B. Calder, Reducing the Overhead of Dynamic Compilation, Journal of Software: Practice and Experience, Volume 31, Issue 8, Dec, 2000, pp 717-738
14. C. Krintz and R. Wolski, Using JavaNws to Compare C and Java TCP-Socket Performance, Journal of Concurrency and Computation: Practice and Experience, Volume 13, Issue 8-9, Jun, 2001, pp 815-859

Invited Talks (Past 2 Years):

- AppScale: Open-source Platform-Level Cloud Computing Framework
  - IBM Almaden Research Lab, Mar, 2010; Google Meetup, Feb, 2010; Internet2/Joint Techs, Jan, 2010; IBM Research, Aug, 2009
- Panel: The Value of Awards and How to Get Them, Grace Hopper Conference, Sep, 2009
- AppScale: Open-source Platform-as-a-Service (PaaS) System for Energy-Aware Cloud Computing Research, Oracle visit to UCSB, Sep, 2009
- AppScale: Open-source Platform-as-a-Service (PaaS) in Support of Cloud Computing Research
  - HP Labs, Sep, 2009; Jet Propulsion Lab, Jul, 2009; VMWare (virtual), Jul, 2009
- ACM Programming Languages Summer School Lectures on Adaptive Optimizations and Modern Language Runtimes, Jul, 2009
- Efficient, Type-Safe Shared Memory for Cross-MRE Communication and Coordination; Colloquium at Boston University, Apr, 2008

- **Diversity:** 2007-08 Academic Year: Microsoft+UCSB – using Boku to introduce Girls Inc. (`http://www.girlsincsb.org/`) students to programming and computer science. Lead w/ 12 undergraduate students (Boku advocates).
- **Diversity:** Balancing Work and Life/Time Management CRA-W Mentoring Workshop, Invited Speaker, Jun, 2007, with FCRC
- **Diversity:** Information Technology and the Community (UCSB course for undergraduates on outreach to the community (local non-profits and high-schools). Introduce young people to computer science and to impact our local community though information techology support and education (`http://www.cs.ucsb.edu/~ckrintz/classes/cs193/`). Winter Quarter 2007 UCSB

Service & Professional Activities (Past 2 Years):

- **Diversity:** 2008-Present – Invited Member: Advisory Board for the Anita Borg Institute for Women and Technology
- **Diversity:** 2007-09 Lead: Microsoft+UCSB using Boku to introduce Girls Inc. (http://www.girlsincsb.org/) students to programming and computer science. Lead w/ 12 undergraduate students (Boku advocates).
- 2007-2009 Vice Chair ACM Special Interest Group on Programming Languages (SIGPLAN) Executive Committee (With position: Steering committee member: PLDI, POPL, OOPSLA, ICFP, AOSD)
- **Diversity:** 2007-10 CRA-W Cohort Workshop Invited Speaker
- Publications Chair: ACM Conference on Code Generation and Optimization (CGO) 2005
- Program Committee Member: CGO07, ISMM07, ASPLOS08, CGO08, ASPLOS08, GraceHopper09, PLDI09, PPOPP09, ASPLOS09, OOPSLA09, CC10, PSIETA10, PLDI11-ERC, VEE11, PPOPP11-ERC

Grants:

- 2010-11 IBM X10 Innovation Research Award, C. Krintz, PI
- 2010-12 IBM Open Collboration Research Award, C. Krintz, PI
- CSR:Systems and Software Research for Compute-Intensive Cloud Computing; NSF F10-F15, Krintz, PI
- II(CRI): Equipping the Allosphere, an Environment for Immersive Data Exploration; NSF FY09-FY14, C. Krintz, Co-PI
- 2009 IBM Open-Collaboration Research Award, C. Krintz, PI
- Defense University Research Instrumentation Program (DURIP): Large-Scale Multimodal Wireless Sensor Network, Dept. of Defense, FY08-FY11, C. Krintz, Co-PI
- NETS/NOSS: SENSIMIDE: Integrated Software Development and Multi-Mode Simulation for Large-Scale Sensor Networks, NSF FY06-FY09, C. Krintz, Co-PI
- NSF 2009 UCSB Faculty Outreach Grant, C. Krintz, Co-PI
- NSF 2008 Workshop on Modern Programming Language Curricula, C. Krintz, Co-PI
- CAREER: VIVA – Vertically Integrated VirtualizAtion: Automatic, Full System, Specialization for High-End Computing, NSF FY06-FY11, C. Krintz, PI
- Microsoft Phoenix Award, Microsoft Research FY05-FY07, C. Krintz, PI
- ST-HEC: Automatic Linux Customization and Optimization for High-Performance Scientific Applications, NSF FY04-FY07, C. Krintz, PI
- Wireless Sensor Network Laboratory Infrastructure, NSF FY04 - FY06, C. Krintz, Co-PI
- NGS: Developing a Resource-Aware Adaptive Compilation System for High-Performance Distributed Computing, NSF Next Generation Software, FY02 - FY03, C. Krintz, Co-PI
- Annotation-Based Optimizations for Java Virtual Machines, Intel Corporation / UC-MICRO, FY03-FY05, C. Krintz, PI
- ITR: Virtual Power for a Wireless Campus - A Vision of Ubiquitous Computing On Low-Cost Mobile Devices, NSF (CCR-0205712), FY02 - FY05, C. Krintz, Co-PI
- Empirical Evaluation of IPF Optimizations, Intel Corporation, FY02-FY04, C. Krintz, PI

Awards/Recognition:

- 2010 Elevated to ACM Senior Member
- 2010 Elevated to IEEE Senior Member
- 2008-9 UCSB Academic Senate Distinguished Teaching Award
- 2008 CRA-W Anita Borg Early Career (BECA) Award for outstanding research and outreach contributions
- 2008 Outstanding Faculty in Computer Science (co-award) for teaching excellence
- (also listed under grants) CAREER: VIVA – Vertically Integrated VirtualizAtion: Automatic, Full System, Specialization for High-End Computing, NSF FY06-FY11, C. Krintz, PI

Number of PhD Advisees: 4

Number of MS Advisees: 2

Number of Graduated PhD Advisees: 6

Number of Graduated MS Advisees: 14

Number of Graduated Undergraduate Advisees: 22