

ZHENDONG SU

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Research Interests

Programming languages, software engineering, and computer security, focusing on techniques and tools for improving software and system reliability and security. Current projects include:

- Web and database application security
- Malicious code detection, analysis, and prevention
- Automated debugging
- Clone detection and its applications
- Program analysis of numerical software
- Firewall modeling, analysis, and optimization

Professional Preparation

- Ph.D., Computer Science (with minor in Mathematics), University of California, Berkeley, 12/2002
- M.S., Computer Science, University of California, Berkeley, 12/1997
- B.A., Mathematics (with the Highest Honor), University of Texas at Austin, 08/1995
- B.S., Computer Science (with the Highest Honor), University of Texas at Austin, 08/1995
- Undergraduate Study, Business School, University of Wisconsin, Eau Claire, 1991–1992
- Undergraduate Study, International Trade, Fudan University, Shanghai, China, 1988–1991

Appointments

- Associate Professor (with tenure), Department of Computer Science, UC Davis, 7/2007–present
- Assistant Professor, Department of Computer Science, UC Davis, 1/2003–06/2007
- Visiting Fellow, Automated Software Engineering Group, RIACS/NASA Ames, 9/2002–12/2002
- Graduate Student Instructor, Computer Science Division, UC Berkeley, 1/2000–5/2000
- Graduate Student Researcher, Computer Science Division, UC Berkeley, 6/1996–8/2002
- Research Intern, Computing Sciences Research Center, Bell Laboratories, 5/1997–8/1997

Honors and Awards

- Outstanding Junior Faculty Award, College of Engineering, UC Davis, 2007
- ACM SIGSOFT Distinguished Paper Award Nominee (at ICSE'07), Minneapolis, MN, 2007
- Marquis Who's Who in America, 2007–
- NSF CAREER Award (CISE CCF “Software Engineering and Languages” Program), 2006
- UC Davis Nominee for the Microsoft New Faculty Fellowship, November 2004
- ACM SIGSOFT Distinguished Paper Award (at ICSE'04), Edinburgh, UK, 2004 (*five out of 436*)
- Award Paper selected by TACAS'04 program committee, Barcelona, Spain, 2004 (*seven out of 145*)

- The EAPLS Best Paper Award (at ETAPS'98), Lisbon, Portugal, 1998 (*one out of 290*)
- UC Regents Fellowship, UC Berkeley, 1995–1996
- Named the Dean's Honored Graduate of the Year in Computer Science, UT Austin, 1995
- Presidential Scholarship, UT Austin, 1994–1995
- Member of 2nd Place Team in the ACM South Central Regional Programming Contest, USA, 1994
- Ranked in the Top 150 in US and Canada in the William Lowell Putnam Mathematical Competition, 1993
- Directly Admitted into Fudan University without College Entrance Examination, China, 1988
- First Prize Winner in the Shanghai High School Mathematics Competition, China, 1987
- Fourth Prize Winner in the Chinese National High School Mechanics Competition, China, 1987

Funding

- Intel, California Public Affairs Higher Education Equipment Grant, “Bringing Multi-core Technologies to the Classrooms,” 15 dual-core workstations with an approximated value of \$50,000, 2007–2008, PI.
- NSF, Computing Processes and Artifacts (CPA) Grant CCF-0702622, “Program Analysis for Reliable Numerical Software,” \$400,000, 2007–2010, sole PI.
- AFOSR, MURI, “Helix: A Self-Regenerative Architecture for the Incorruptible Enterprise,” \$4,589,449 (UCD portion: \$1,621,605), 2007–2012, co-PI (with PI: John Knight, University of Virginia and co-PIs from University of Virginia, UC Davis, UCSB, and University of New Mexico).
- DOE LLNL subcontract to UC Davis, “Software Security Analysis,” \$280,000 (total award approx. \$1,500,000), 2006–2009, sole PI (LLNL PI: Daniel J. Quinlan).
- NSF, CyberTrust Team Grant, “Collaborative Research: CT-T: A Vertical Systems Framework for Effective Defense against Memory-based Attacks,” \$750,000, 2006–2010, PI (with co-PI: S. Felix Wu, UCD and co-PI: Frederic Chong, UCSB).
- NSF, CAREER Grant CCF-0546844, “CAREER: Reliability and Security of Database and Web Applications,” \$450,000, 2006–2010, sole PI.
- NSF NeTS-NBD Grant CNS-0520320, “Automatic Validation, Optimization, and Adaptation of Distributed Firewalls for Network Performance and Security,” \$400,000, 2005–2008, co-PI (with PI: C-N. Chuah and co-PI: H. Chen).
- Intel, “Containing Malicious Software,” \$50,000, gift, 2005 (with H. Chen).
- DARPA, Self Regenerative Systems (BAA03-44), Subcontract from Global Infotek, Inc. (GITI), \$400,000, 2004–2006, co-PI (with PI: K. Levitt and co-PI: J. Rowe).
- HP, Education Grant, “Proposal for Bringing the Power of Itanium 2 to the Classroom,” \$127,141, 2004, co-PI (with PI: Z. Bai, other co-PIs include M. Farrens, R. Olsson, R. Pandey, K. Wilken, and K. Jones).
- UC Davis, Junior Faculty Research Grant, \$2,500, 2003–2006.

Selected Invited Presentations

1. Web and Database Application Security. Invited Lecturer, International Summer School on Language-Based Techniques for Integrating with the External World, University of Oregon, Eugene, Oregon, July 18–26, 2007.
2. Static and Dynamic Analysis for Web Application Security. Google Inc., February 20, 2007.
3. Scalable and Accurate Tree-based Detection of Code Clones. Stanford Software Seminar, Computer Science Department, Stanford University, October 16, 2006.
4. Syntactic Prevention of Command Injection Attacks in Web Applications. State of the Art in Software Engineering, Rutgers University, June 16, 2006.
5. Web Application Security: Software Engineering Challenges and Opportunities. Keynote Speaker, International Workshop on Software Engineering for Secure Systems (SESS), In conjunction with ICSE'06, Shanghai, China, May 2006.
6. Research on Software Reliability and Security. Presented at the CASC/ISCR Seminar at LLNL, California, May 2005.

Refereed Conference and Workshop Publications (included acceptance rates for recent publications)

1. M. Van Gundy, H. Chen, Z. Su, and G. Vigna. Feature Omission Vulnerabilities: Thwarting Signature Generation for Polymorphic Worms. To appear in the *Annual Computer Security Applications Conference (ACSAC'07)*, Miami Beach, Florida, December 2007. (22%)
2. L. Jiang and Z. Su. Context-Aware Statistical Debugging: From Bug Predictors to Faulty Control Flow Paths. To appear in the *22nd IEEE/ACM International Conference on Automated Software Engineering (ASE'07)*, Atlanta, Georgia, November 2007. (12%)
3. L. Jiang, Z. Su, and E. Chiu. Context-Based Detection of Clone-Related Bugs. To appear in the *Sixth Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE'07)*, Dubrovnik, Croatia, September 2007. (17%)
4. G. Wassermann and Z. Su. Sound and Precise Analysis of Web Applications for Injection Vulnerabilities. In *ACM SIGPLAN 2007 Conference on Programming Language Design and Implementation (PLDI'07)*, San Diego, CA, June 2007. (25%)
5. L. Jiang, G. Misherghi, Z. Su, and S. Gloudu. DECKARD: Scalable and Accurate Tree-based Detection of Code Clones. In the *29th International Conference on Software Engineering (ICSE'07)*, Minneapolis, MN, May 2007 (ACM SIGSOFT Distinguished Paper Award Nominee). (15%)
6. F. Hsu, H. Chen, T. Ristenpart, J. Li, and Z. Su. Back to the Future: A Framework for Automatic Malware Removal and System Repair. In *Annual Computer Security Applications Conference (ACSAC'06)*, Miami Beach, Florida, December 2006. (30%)
7. G. Wassermann and Z. Su. Validity Checking for Finite Automata over Linear Arithmetic Constraints. In the *26th Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS'06)*, Kolkata, India, December 2006. (22%)
8. J. Crandall, G. Wassermann, D. de Oliveira, Z. Su, S. F. Wu, and F. Chong. Temporal Search: Detecting Hidden Malware Timebombs with Virtual Machines. In *Twelfth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS'06)*, San Jose, California, October 2006. (22%)
9. D. de Oliveira, J. Crandall, G. Wassermann, S. F. Wu, Z. Su, and F. Chong. ExecRecorder: VM-Based Full-System Replay for Attack Analysis and System Recovery (*short paper, 6 pages*). In the *Workshop on Architectural and System Support for Improving Software Dependability (ASID'06)*, San Jose, California, October 2006.
10. L. Yuan, J. Mai, Z. Su, H. Chen, C. Chuah, and P. Mohapatra. FIREMAN: A Toolkit For FIREwall Modeling and Analysis. In *2006 IEEE Symposium on Security and Privacy (S&P'06)*, Oakland, California, May 2006. (9%)
11. L. Jiang and Z. Su. Osprey: A Practical Type System for Validating Dimensional Unit Correctness of C Programs. In the *28th International Conference on Software Engineering (ICSE'06)*, Shanghai, China, May 2006. (9%)
12. G. Misherghi and Z. Su. HDD: Hierarchical Delta Debugging. In the *28th International Conference on Software Engineering (ICSE'06)*, Shanghai, China, May 2006. (9%)
13. Z. Su and G. Wassermann. The Essence of Command Injection Attacks in Web Applications. In *ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL'06)*, Charleston, South Carolina, January 2006. (19%)
14. J. Crandall, Z. Su, S. F. Wu, F. Chong. On Deriving Unknown Vulnerabilities from Zero-Day Polymorphic and Metamorphic Worm Exploits. In *Proceedings of the 12th ACM Conference on Computer and Communications Security (CCS'05)*, Alexandria, Virginia, November 2005. (15%)
15. J. Niehren, T. Priesnitz, and Z. Su. Complexity of Subtype Satisfiability over Posets. In *Proceedings of European Symposium On Programming (ESOP'05)*, Edinburgh, Scotland, UK, April 2005. (24%)

16. G. Wassermann and Z. Su. An Analysis Framework for Security in Web Applications. In Proceedings of the Workshop on Specification and Verification of Component-Based Systems, November 2004. **(43%)**
17. C. Gould, Z. Su, and P. Devanbu. JDBC Checker: A Static Analysis Tool for SQL/JDBC Applications. Formal Research Demonstrations Track, in *Proceedings of the 26th International Conference on Software Engineering (ICSE'04)*, Edinburgh, Scotland, UK, May 2004. **(35%)**
18. C. Gould, Z. Su, and P. Devanbu. Static Checking of Dynamically Generated Queries in Database Applications. In *Proceedings of the 26th International Conference on Software Engineering (ICSE'04)*, Scotland, UK, May 23-28, 2004 (**ACM SIGSOFT Distinguished Paper Award**). **(13%)**
19. Z. Su and D. Wagner. A Class of Polynomially Solvable Range Constraints for Interval Analysis without Widenings and Narrowings. In *Proceedings of the 10th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS'04)*, Barcelona, Spain, March 29-April 2, 2004. Among **Best Papers** of TACAS'04 (7/145, **4.8%**), invited paper in Theoretical Computer Science). **(25%)**
20. Z. Su, A. Aiken, J. Niehren, T. Priesnitz, and R. Treinen. The First-Order Theory of Subtyping Constraints. In *Proceedings of the 29th Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL'02)*, pages 203–216, Portland, USA, January 16-18, 2002.
21. Z. Su and A. Aiken. Entailment with Conditional Equality Constraints. In *Proceedings of European Symposium On Programming (ESOP'01)*, pages 170–189, Genova, Italy, April 2–6, 2001.
22. Z. Su, M. Fähndrich, and A. Aiken. Projection Merging: Reducing Redundancies in Inclusion Constraint Graphs. In *Proceedings of the 27th Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL'00)*, pages 81–95, Boston, USA, January 19–21, 2000.
23. M. Fähndrich, J.S. Foster, Z. Su, and A. Aiken. Partial Online Cycle Elimination in Inclusion Constraint Graphs. In *Proceedings of the 1998 ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI'98)*, pages 85–96, Montreal, Canada, June 1998.
24. A. Aiken, M. Fähndrich, and Z. Su. Detecting Races in Relay Ladder Logic Programs. In Proceedings of the International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS'98), pages 184–200, Lisbon, Portugal, March 1998. **EAPLS Best Paper Award at ETAPS'98.**
25. A. Aiken, M. Fähndrich, J.S. Foster, and Z. Su. A Toolkit for Constructing Type- and Constraint-Based Program Analyses. In *Proceedings of the Second International Workshop on Types in Compilation (TIC'98)*, pages 78–96, Kyoto, Japan, March 1998.
26. A. Muscholl, D. Peled, and Z. Su. Deciding Properties for Message Sequence Charts. In *Proceedings of the International Conference on Foundations of Software Science and Computation Structures (FoSSaCS'98)*, pages 226–242, Lisbon, Portugal, March 1998.

Journal Publications

1. G. Wassermann, C. Gould, Z. Su, and P. Devanbu. Static Checking of Dynamically Generated Queries in Database Applications. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, Accepted, November 2006 (INVITED PAPER).
2. Z. Su, A. Aiken, J. Niehren, T. Priesnitz, and R. Treinen. The First-Order Theory of Subtyping Constraints. *ACM Transaction on Programming Languages and Systems (TOPLAS)*, Accepted pending minor revisions, 2005.
3. Z. Su and D. Wagner. A Class of Polynomially Solvable Range Constraints for Interval Analysis without Widenings. In *Theoretical Computer Science (TCS)*, 345(1), 122–138, 2005 (INVITED PAPER).
4. A. Aiken, M. Fähndrich, and Z. Su. Detecting Races in Relay Ladder Logic Programs. In *Springer International Journal on Software Tools for Technology Transfer (STTT)*, 3(1), pages 93–105, Springer Verlag, 2000 (INVITED PAPER).

Theses, Technical Reports, and Unpublished Manuscripts

1. G. Wassermann and Z. Su. Validity Checking for Finite Automata over Linear Arithmetic Constraints. Technical Report UCD//CSE-2006-16, UC Davis, 2006.
2. L. Jiang and Z. Su. Automatic Isolation of Cause-Effect Chains with Machine Learning. Technical Report UCD//CSE-2005-32, UC Davis, 2005.
3. H. Chen, F. Hsu, J. Li, T. Ristenpart, and Z. Su. Back to the Future: A Framework for Automatic Malware Removal and System Repair. Technical Report UCD//CSE-2005-6, UC Davis, 2005.
4. G. Wassermann and Z. Su. Validity Checking for Finite Automata over Linear Arithmetic. Unpublished manuscript, October 2004.
5. Z. Su and G. Wassermann. Type-based Inference of Size Relationships for XML Transformations. Technical Report UCD//CSE-2004-8, UC Davis, April 2004.
6. Z. Su and D. Wagner. An Efficient Algorithm for Finding the Optimal Solutions of Integer Range Constraints, Computer Science Technical Report UCD//CSE-2003-5, UC Davis, February 2003.
7. Z. Su. Algorithms for and the Complexity of Constraint Entailment. Ph.D. Thesis, University of California, Berkeley, December 2002.
8. Z. Su and A. Aiken. Entailment with Conditional Equality Constraints. Computer Science Division Tech Report UCB//CSD-00-1113 University of California at Berkeley, October 2000.
9. Z. Su. Stutter Equivalence for Infinite State Systems. Unpublished manuscript, May 1998.
10. Z. Su. Automatic Analysis of Relay Ladder Logic Programs. Computer Science Division Tech Report UCB//CSD-97-969 University of California at Berkeley, September 1997.
11. Z. Su and M. Zhou. A Comparative Analysis of Branch Prediction Schemes. Unpublished manuscript, December 1995.
12. Z. Su. Automating the Computation of Nested Abnormality Theories. Undergraduate Honor's Thesis, Department of Computer Sciences The University of Texas at Austin, June 1995.

Professional Activities

• Program Committee:

- International Conference on Software Engineering (ICSE), Leipzig, Germany, 2008
- The 17th International World Wide Web Conference (WWW), Beijing, China, 2008
- The 15th Annual Network & Distributed System Security Symposium (NDSS), San Diego, CA, 2008
- ASIAN Symposium on Programming Language and Systems (APLAS), Singapore, 2007
- Eclipse Technology eXchange (ETX) Workshop (with OOPSLA'07), Montreal, Canada, 2007
- International Static Analysis Symposium (SAS), Seoul, Korea, 2006
- ACM SIGSOFT Symposium on Foundations of Software Engineering (FSE), Portland, Oregon, 2006
- Tools and Algorithms for the Construction and Analysis of Systems (TACAS), Vienna, Austria, 2006
- International Workshop on Remote Analysis and Measurement of Software Systems (RAMSS'05)

• Journal and Conference Reviewer:

- Information and Computation (I&C)
- Journal of Functional Programming (JFP)
- ACM Transactions on Programming Languages and Systems (TOPLAS)
- ACM Transactions on Software Engineering and Methodology (TOSEM)
- IEEE Transactions on Software Engineering (TSE)
- Higher-Order and Symbolic Computation (HOSC)

- Symposium on Principles of Programming Languages (POPL)
- ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)
- International Conference on Software Engineering (ICSE)
- Foundations of Software Engineering (FSE)
- Static Analysis Symposium (SAS)
- Conference on Rewriting Techniques and Applications (RTA)
- International Colloquium on Automata, Languages and Programming (ICALP)
- International Conference on Computer Aided Verification (CAV)
- Tools and Algorithms for the Construction and Analysis of Systems (TACAS)
- IEEE INFOCOM Conference on Computer Communications (INFOCOM)
- Annual Network and Distributed System Security Symposium (NDSS)
- Annual Computer Security Applications Conference (ACSAC)

- **Proposal Reviewer:**

- National Science Foundation (NSF) Panelist (2005, 2006).
- Air Force Office of Scientific Research (AFOSR) Proposal Reviewer (2007).

Teaching

- Software Development and OO Programming (ECS 40), UC Davis [F'07]
- Programming Languages (ECS 140A), UC Davis [S'04, S'07, S'08]
- Compilers (ECS 142), UC Davis, [W'03, W'05, F'06]
- Formal Semantics of Programming Languages (ECS 240), UC Davis [W'06, S'07, S'08]
- Seminar on Program Analysis (ECS 289C), UC Davis [S'03, W'04, W'05]

Names of Research Advisors

- **Ph.D.** Alex Aiken, UC Berkeley (now at Stanford), June 1996–December 2002
- **M.S.** Alex Aiken, UC Berkeley (now at Stanford), June 1996–December 1997
- **B.S.** Vladimir Lifschitz, UT Austin, August 1994–August 1995

Graduate Student (co-)Advising

- J. Apple (UC Davis), September 2007–present
- I. Balepin (UC Davis), September 2003–present (co-advisor)
- J. Crandall (UC Davis), 2004–June 2007 (co-advisor)
- M. Gabel (UC Davis), September 2006–present
- C. Gould (UC Davis), September–November 2004
- L. Jiang (UC Davis), September 2003–present
- T. Kwon (UC Davis), September 2007–present
- G. Mishserghi (UC Davis), March 2005–June 2007
- D. Pallas (UC Davis), March 2004–June 2005 (co-advisor)
- A. Saebjoernsen (UC Davis), September 2006–present
- F. Sun (UC Davis), September 2007–present
- M. Van Gundy (UC Davis), September 2006–present (co-advisor)
- G. Wassermann (UC Davis), June 2003–present
- L. Xu (UC Davis), September 2007–present
- D. Zinn (UC Davis), January 2007–present (co-advisor)

Undergraduate Student (co-)Advising

- S. Peterson (UC Davis), July 2007–present
- S. Shepard (UC Davis), August 2007–present
- E. Chiu (UC Davis), January 2007–June 2007
- M. Byrd (UC Davis), June 2004–December 2004
- C. Gould (UC Davis), March 2003–June 2004
- A. Singh (UC Davis), January–June 2005

Visiting Scholars

- S. Glondu (ENS Cachan, France), June–August 2005
- K. Doh (Hanyang University, South Korea), February 2005–August 2006
- C. David (ENS Cachan, France), June–August 2002
- T. Priesnitz (Universität des Saarlandes, Germany), September–October 2001

Qualifying Examination Committee

1. Matin Hashemi (Electrical & Computer Engineering), *TBA*, Date: September 20, 2007
2. Jingyu Kang (Electrical & Computer Engineering), *Constructions, Applications, and Decoder Implementation of Low-Density Parity-Check Codes*, Date: September 11, 2007
3. Jeffrey Wu (Computer Science), *BOTS: A Constraint-based System for Composing Component Software Targeting Embedded Systems*, Date: June 1, 2007
4. Till Stegers (Computer Science), *Formal Indistinguishability Relations*, Date: March 23, 2007
5. Payman Mohassel (Computer Science), *Efficiency of Secure Multiparty Protocols*, Date: March 22, 2007
6. Liping Guo (Electrical & Computer Engineering), *An Energy Scalable Computational Array for Energy Harvesting Sensors*, Date: November 15, 2006
7. Lynn Nguyen (Computer Science), *Approaches to Secure Code In Same Privilege Mode As Malicious Code*, Date: September 5, 2006
8. Sophie Engle (Computer Science), *Vulnerability Analysis*, Date: September 5, 2006
9. Po-Kuan Huang (Electrical & Computer Engineering), *Efficient and Scalable Energy Optimization for Embedded System*, Date: September 5, 2006
10. Lingxiao Jiang (Computer Science), *Reliability for Numerical Software Systems*, Date: August 7, 2006
11. Chris Lupo (Electrical & Computer Engineering), *Hierarchical Selection of Spill Candidates and Spill-Code Placement in a Graph-Coloring Register Allocator*, Date: June 6, 2006
12. Gary Wassermann (Computer Science), *Security and Reliability of Web Application Metaprogramming*, Date: March 9, 2006
13. Jed Crandall (Computer Science), *Containing Rapid Polymorphic and Metamorphic Worms with Network Content Filtering*, Date: October 19, 2005 (**committee chair**)
14. Yu-Cheng Chou (Mechanical Engineering), *Dynamic Parallel Processing with Mobile Agents for Distributed Systems*, Date: September 2, 2005
15. Nija Shi (Computer Science), *Reverse Engineering of Design Patterns from Java Source Code*, Date: June 16, 2005
16. Anant Chaudhary (Computer Science), *Formal Reasoning for Intrusion Detection Systems*, Date: March 15, 2005
17. Tufan Demir (Computer Science), *Application of Biologically Inspired Diversity Ideas to Create Heterogeneous Environments for Malicious Code*, Date: March 9, 2005
18. Erdem Demir (Computer Science), *Cross Layer Adaptations*, Date: February 23, 2005

19. Tamara Dahlgren (Computer Science), *Self-Adaptive Enforcement of Interface Assertions*, Date: February 7, 2005
20. Martin Gagne (Computer Science), *A Study of Random Oracles*, Date: November 16, 2004
21. Jingmin (Jimmy) Zhou (Computer Science), *Modeling Intrusion Detection Alerts for Correlation*, Date: June 2, 2004
22. Mark Heffernan (Electrical & Computer Engineering), *Improved Instruction Scheduling*, Date: December 2, 2003
23. Tao Song (Computer Science), *Verification of Intrusion Detection Systems*, Date: September 18, 2003
24. Ghassan Shobaki (Computer Science), *Optimal Global Instruction Scheduling*, Date: June 16, 2003

Doctoral Thesis Committee

1. Jim Apple (Computer Science)
2. Ivan Balepin (Computer Science), Advisor: Prof. Karl Levitt
3. Jed Crandall (Computer Science), Advisor: Prof. Fred Chong [**graduated**]
4. O. Erdem Demir (Computer Science), Advisor: Prof. Prem Devanbu [**graduated**]
5. Mark Gabel (Computer Science)
6. Lingxiao Jiang (Computer Science)
7. Taeho Kwon (Computer Science)
8. Andreas Saebjoernsen (Computer Science)
9. Nija Shi (Computer Science), Advisor: Prof. Ron Olsson [**graduated**]
10. Ghassan Shobaki (Computer Science), Advisor: Prof. Ken Wilken [**graduated**]
11. Fangqi Sun (Computer Science)
12. Gary Wassermann (Computer Science)
13. Liang Xu (Computer Science)

M.S. Thesis Committee

1. Ghassan Mishserghi (Computer Science), *HDD: Hierarchical Delta Debugging*, 2007, Chair.
2. Ryan Iwahashi (Computer Science), *Defining and Detecting Software Vulnerabilities that Allow Control Flow Hijack Attacks using Vulnerability-Based Signatures*, 2006, Advisor: Prof. Felix Wu
3. Tom Ristenpart (Computer Science), *Time Stamp Synchronization of Distributed Sensor Logs: Impossibility Results and Approximation Algorithms*, 2005, Advisor: Prof. Matt Bishop
4. Chad Stirling (Computer Science), *Automated Bug Isolation via Program Chipping*, 2005, Advisor: Prof. Ron Olsson

University Service Activities

- Chair, Computer Science Graduate Admissions Committee, UC Davis, 2007–2008
- Computer Science Department Personnel Committee, UC Davis, 2007-2008
- Computer Science Department Colloquium Organizer, UC Davis, 2007-2008
- Reviewer, Graduate Internal Fellowship Applications, UC Davis, 2007
- Graduate Advisor, Department of Computer Science, UC Davis, 2005–present
- CS Representative to the Academic Senate, UC Davis, 2005–present
- College of Engineering Research and Library Committee, 2005–2006
- GGCS Graduate Admissions Committee, 2004–2006
- Faculty Advisor of the Student Workshop on Computing, July–October 2004
- Faculty Representatives Committee, Computer Science, UC Davis, 2004–2005
- Undergraduate Affairs Committee, Computer Science, UC Davis, 2003–2004
- CS Representative to the PSE Library Committee, Computer Science, UC Davis, 01/2003–06/2003