

CURRICULUM VITAE

Martin C. Rinard

Department of Electrical Engineering and Computer Science
Computer Science and Artificial Intelligence Laboratory
Massachusetts Institute of Technology
32 Vassar Street, 32-G828
Cambridge, Massachusetts 02139
(617) 258-6922
rinard@csail.mit.edu

RESEARCH INTERESTS

Computer Systems, Computer Security, Programming Languages, Software Engineering, Program Analysis, Program Verification, Compilers, Real-Time Systems, Embedded Systems, Distributed Systems, Parallel Systems.

EDUCATION

Stanford University. Ph.D. in Computer Science, Summer 1994.

Thesis: The Design, Implementation and Evaluation of Jade: A Portable, Implicitly Parallel Programming Language.

Advisor : Professor Monica S. Lam.

Brown University. Sc.B. in Computer Science, Magna Cum Laude and with Honors, June 1984.

Honors Thesis: The Internal Structure of an Ideographic Programming Environment.

Advisor: Professor Thomas W. Doepfner, Jr.

ACADEMIC EXPERIENCE

- 2006 – present **Professor**, Massachusetts Institute of Technology, Cambridge, Massachusetts.
- 2000 – 2006 **Associate Professor**, Massachusetts Institute of Technology, Cambridge, Massachusetts.
- 1997 – 2000 **Assistant Professor**, Massachusetts Institute of Technology, Cambridge, Massachusetts.
- 1994 – 1997 **Assistant Professor**, University of California at Santa Barbara, Santa Barbara, California.
- 1986 – 1994 **Research Assistant**, Stanford University, Stanford, California.
- 1989 **Teaching Fellow**, Stanford University, Stanford, California.
- 1982 – 1983 **Research Assistant**, Brown University, Providence, Rhode Island.

PROFESSIONAL EXPERIENCE

- 1985 - 1986 **Software Engineer**, Polygen Corporation, Waltham, Massachusetts. Member of a team developing a computer-aided molecular design system. Designed and implemented a novel algorithm for embedding complex merged and bridged ring systems into 3-space, and an algorithm for automatically determining atom types for molecular mechanics programs given a molecule's chemical structure.
- 1984 - 1985 **Software Engineer**, Ikan Systems, Providence, Rhode Island. Member of a team developing an electronic publishing system. Responsible for helping to design the user interface, designing software tools to implement the user interface, and implementing the user interface. Designed a hierarchical graphics package and a package to generate and automatically maintain graphical representations of data objects. Designed and implemented a special-purpose, explicitly parallel language for processing sequences of user actions.

HONORS AND AWARDS

Best Paper Award, OOPSLA 2013

The Most Notable Paper Award / Onward! 2013

One of 25 Most Significant Papers from First 20 Years of IEEE International Symposium on Field-Programmable Custom Computing Machines

Best Paper Award, 33rd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2012), June 2012

Best Paper Award, 32nd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2011), June 2011

ACM Fellow, December 2009

Distinguished Paper Award, The 27th International Conference on Software Engineering, May 2005

Distinguished Paper Award, The 12th ACM Symposium on the Foundations of Software Engineering, November 2004

Most Influential Paper in 20 Years Award, Area: Concurrent Constraint Programming, The Association for Logic Programming, 2004

Solomon Buchsbaum AT&T Research Fund Award, 1999

Everett Moore Baker Memorial Award for Excellence in Undergraduate Teaching at MIT, Honorable Mention, 1998

National Science Foundation Faculty Early Career Development Award, 1997

University of California, Santa Barbara Outstanding Faculty Member in Computer Science, 1996

Alfred P. Sloan Research Fellowship, 1995

Brown University Undergraduate Research Fellowship, 1983

PUBLICATIONS

Fan Long, Stelios Sidiroglou-Douskos, and Martin Rinard. Automatic Runtime Error Repair and Containment via Recovery Shepherd. In *Proceedings of the 35th ACM Conference on Programming Language Design and Implementation (PLDI 2014)*, Edinburgh, United Kingdom, June 2014.

Fan Long, Stelios Sidiroglou-Douskos, Deokhwan Kim, and Martin Rinard. Sound Input Filter Generation for Integer Overflow Errors. In *Proceedings of the 41st ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL 2014)*, San Diego, California, January 2014.

Youry Khomelevsky, Martin Rinard, and Stelios Sidiroglou-Douskos. A Source-to-Source Transformation Tool for Error Fixing. In *CASCON 2013*, Toronto, Canada, November 2013.

Michael Carbin, Sasa Misailovic, and Martin Rinard. Verifying Quantitative Reliability for Programs That Execute on Unreliable Hardware. In *Proceedings of the 2013 ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2013)*, Indianapolis, Indiana, October 2013.

Tao Lei, Fan Long, Regina Barzilay, and Martin Rinard. From Natural Language Specifications to Program Input Parsers. In *Proceedings of the 51st Annual Meeting of the Association for Computational Linguistics*, Sofia, Bulgaria, August 2013.

Martin Rinard. Parallel Synchronization-Free Approximate Data Structure Construction. In *Proceedings of the 5th USENIX Workshop on Hot Topics in Parallelism*, San Jose, California, June 2013.

Sasa Misailovic, Deokhwan Kim, and Martin Rinard. Parallelizing Sequential Programs with Statistical Accuracy Tests. In *ACM Transactions on Embedded Computing Systems*, Volume 12, Number 2s, May 2013.

Karthick Jayaraman, Mahesh Tipunitara, Vijay Ganesh, Martin Rinard, and Steven Chapin. Mohawk: Abstraction-Refinement and Bound-Estimation for Verifying Access Control Policies, In *ACM Transactions on Information and System Security*, Volume 15, Number 4, April 2013.

Michael Carbin, Deokhwan Kim, Sasa Misailovic, and Martin Rinard. Verified Integrity Properties for Safe Approximate Program Transformations, In *Proceedings of the ACM SIGPLAN 2013 Workshop on Partial Evaluation and Program Manipulation (PEPM 2013)*, Rome, Italy, January 2013.

Peter Hawkins, Alex Aiken, Kathleen Fisher, Martin Rinard, and Mooly Sagiv. An Introduction to Data Representation Synthesis, In *Communications of the ACM*, Volume 55, Number 12, December 2012.

Sasa Misailovic, Stelios Sidiroglou, and Martin Rinard. Dancing With Uncertainty, In *RACES-SPLASH 2012 Workshop on Relaxing Synchronization for Multicore and Manycore Scalability*, Tucson, Arizona, October 2012.

Martin Rinard. Unsynchronized Techniques for Approximate Parallel Computing, In *RACES-SPLASH 2012 Workshop on Relaxing Synchronization for Multicore and Manycore Scalability*, Tucson, Arizona, October 2012.

Michael Carbin and Martin Rinard. (Relative) Safety Properties for Relaxed Approximate Programs, In *RACES-SPLASH 2012 Workshop on Relaxing Synchronization for Multicore and Manycore Scalability*, Tucson, Arizona, October 2012.

Michael Kling, Sasa Misailovic, Michael Carbin, and Martin Rinard. Bolt: On-Demand Infinite Loop Escape in Unmodified Binaries, In *Proceedings of the 27th Annual ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2012)*, Tucson, Arizona, October 2012.

Martin Rinard. Example-Driven Program Synthesis for End-User Programming: Technical Perspective, In *Communications of the ACM*, Volume 55, Number 8, August 2012.

Vijay Ganesh, Charles W. O'Donnell, Mate Soos, Srinivas Devadas, Martin Rinard, and Armando-Solar Lezama. Lynx: A Programmatic SAT Solver for the RNA-Folding Problem, In *Theory and Applications of Satisfiability Testing – SAT 2012 – 15th Annual Conference*, Trento, Italy, June 2012.

Martin Rinard. Obtaining and Reasoning About Good Enough Software, In *49th Annual Design Automation Conference 2012 (DAC '12)*, San Francisco, California June 2012.

Michael Carbin, Deokhwan Kim, Sasa Misailovic, and Martin Rinard. Proving Acceptability Properties of Relaxed Nondeterministic Approximate Programs, In *Proceedings of the 33rd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2012)*, Beijing, China June 2012.

Peter Hawkins, Alex Aiken, Kathleen Fisher, Martin Rinard, and Mooly Sagiv. Concurrent Data Representation Synthesis, In *Proceedings of the 33rd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2012)*, Beijing, China June 2012.

Fan Long, Vijay Ganesh, Michael Carbin, Stelios Sidiroglou, and Martin Rinard. Automatic Input Rectification, In *Proceedings of the 34th International Conference on Software Engineering*, Zurich, Switzerland June 2012.

Peter Hawkins, Alex Aiken, Kathleen Fisher, Martin Rinard, and Mooly Sagiv. Reasoning About Lock Placements, In *Proceedings of Programming Languages and Systems – 21st European Symposium on Programming (ESOP 2012)*, Tallinn, Estonia March 2012.

Martin Rinard. What to do When Things Go Wrong: Recovery in Complex (Computer) Systems, In *Companion Volume of the 11th International Conference on Aspect-Oriented Software Development (AOSD 2012)*, Potsdam, Germany March 2012.

Zeyuan Allen Zhu, Sasa Misailovic, Jonathan Kelner, and Martin Rinard. Randomized Accuracy-Aware Transformations for Efficient Approximate Computing, In *Proceedings of the 39th Annual ACM Symposium on Principles of Programming Languages*, Philadelphia, Pennsylvania, January 2012.

Karthik Jayaraman, Vijay Ganesh, Mahesh Tripunitara, Martin Rinard, and Steve Chapin. Automatic Error Finding in Access-Control Policies, In *ACM Conference on Computer and Communications Security*, Chicago, Illinois, October 2011.

Sasa Misailovic, Dan Roy, and Martin Rinard. Probabilistically Accurate Program Transformations, In *Static Analysis – 18th International Symposium (SAS 2011)*, Venice, Italy, September 2011.

Stelios Sidiroglou, Sasa Misailovic, Henry Hoffman, and Martin Rinard. Managing Performance vs. Accuracy Trade-offs with Loop Perforation, In *Proceedings of the 19th ACM SIGSOFT Symposium on the Foundations of Software Engineering (FSE-19) and ESEC '11: 13th European Software Engineering Conference (ESEC-13)*, Szeged, Hungary, September 2011.

Michael Carbin, Sasa Misailovic, Michael Kling, and Martin Rinard. Detecting and Escaping Infinite Loops with Jolt, In *Proceedings of the 25th European Conference on Object-Oriented Programming (ECOOP 2011)*, Lancaster, United Kingdom, July 2011.

Deokhwan Kim and Martin Rinard. Verification of Semantic Commutativity Conditions and Inverse Operations on Linked Data Structures, In *Proceedings of the 32nd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2011)*, San Jose, California, June 2011.

Peter Hawkins, Alex Aiken, Kathleen Fisher, Martin Rinard, and Mooly Sagiv. Data Representation Synthesis, In *Proceedings of the 32nd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2011)*, San Jose, California, June 2011.

Henry Hoffman, Stelios Sidiroglou, Michael Carbin, Sasa Misailovic, Anant Agarwal, and Martin Rinard. Dynamic Knobs for Responsive Power-Aware Computation, In *Proceedings of the 16th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS 2011)*, Newport Beach, California, March 2011.

Martin Rinard. Probabilistic Accuracy Bounds for Perforated Programs: A New Foundation for Program Analysis and Transformation, In *Proceedings of the ACM SIGPLAN 2011 Workshop on Partial Evaluation and Program Manipulation (PEPM '11)*, Austin, Texas, January 2011.

Peter Hawkins, Alex Aiken, Kathleen Fisher, Martin Rinard, and Mooly Sagiv. Data Structure Fusion, In *Proceedings of the Eighth Asian Symposium on Programming Languages and Systems*, Shanghai, China, November 2010.

Peter Hawkins, Alex Aiken, Kathleen Fisher, Martin Rinard, and Mooly Sagiv. Data Structure Fusion, In *Proceedings of the Eighth Asian Symposium on Programming Languages and Systems*, Shanghai, China, November 2010.

Amy Williams, David Housman, Martin Rinard, and David Gifford. Rapid Haplotype Inference for Nuclear Families, In *Genome Biology 2010*, 11(10):R108.

Martin Rinard, Henry Hoffman, Sasa Misailovic, and Stelios Sidiroglou. Patterns and Statistical Analysis for Understanding Reduced Resource Computing, In *Proceedings of Onward! 2010*, Reno/Tahoe Nevada, October 2010.

Stefan Andrei, Albert Cheng, Martin Rinard, and Lawrence Osborne. Optimal Scheduling of Urgent Preemptive Tasks, In *Proceedings of the 16th IEEE International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA '10)*, Trento, Italy July 2010.

Michael Carbin and Martin Rinard. Automatically Identifying Critical Input Regions and Code in Applications, In *Proceedings of the 2010 International Conference on Software Testing and Analysis (ISSTA 2010)*, Trento, Italy July 2010.

Sasa Misailovic, Stelios Sidiroglou, Henry Hoffman, and Martin Rinard. Quality of Service Profiling, In *Proceedings of the ACM/IEEE 32nd International Conference on Software Engineering (ICSE 2010)*, Cape Town, South Africa May 2010.

Nate Kushman, Micah Brodsky, S.R.K. Branavan, Dina Katabi, Regina Barzilay and Martin Rinard. WikiDo, In *Proceedings of the Eighth ACM Workshop on Hot Topics in Networks (HotNets-VII)*, New York, New York October 2009.

Jeff H. Perkins, Sunghun Kim, Sam Larsen, Saman Amarasinghe, Jonathan Bachrach, Michael Carbin, Carlos Pacheco, Frank Sherwood, Stelios Sidiroglou, Greg Sullivan, Weng-Fai Wong, Yoav Zibin, Michael D. Ernst, and Martin Rinard. Automatically Patching Errors in Deployed Software, In *Proceedings of the 22nd ACM*

Symposium on Operating Systems Principles, Big Sky, Montana October 2009.

Stefan Andrei, Gheorghe Grigoras, Martin Rinard, and Roland Yap. A Hierarchy of Tractable Subclasses for SAT and Counting SAT Problems, In *Proceedings of the 11th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC '09)*, Timisoara, Romania September 2009.

Martin Rinard. Integrated Reasoning and Proof Choice Point Selection in the Jahob System (Mechanisms for Program Survival) (Invited Paper), In *Proceedings of the 22nd International Conference on Automated Deduction (CADE 2009)*, Montreal, Canada August 2009.

Martin Rinard. Survival Strategies for Synthesized Hardware Systems (Invited Paper), In *Proceedings of the Seventh ACM-IEEE International Conference on Formal Methods and Models for Codesign (MEMOCODE 2009)*, Cambridge, Massachusetts July 2009.

Karen Zee, Viktor Kuncak, and Martin Rinard. An Integrated Proof Language for Imperative Programs, In *Proceedings of 2009 ACM SIGPLAN Conference on Programming Language Design and Implementation*, Dublin, Ireland June 2009.

Brian Demsky and Martin Rinard. Automatic Extraction of Heap Reference Properties in Object-Oriented Programs, *IEEE Transactions on Software Engineering*, Volume 35, Number 3, May-June 2009.

Vijay Ganesh, Tim Leek, and Martin Rinard. Taint-Based Directed White-Box Fuzzing, In *Proceedings of the 31st International Conference on Software Engineering (ICSE 2009)*, Vancouver, Canada May 2009.

Quang Hieu Vu, Beng Chin Ooi, Martin C. Rinard, and Kian-Lee Tan. Histogram-Based Global Load Balancing in Structured Peer-to-Peer Systems, In *IEEE Transactions on Knowledge and Data Engineering*, Volume 21, Number 4, April 2009.

Martin C. Rinard. Technical Perspective – Patching Program Errors, In *Communications of the ACM*, Volume 51, Number 12, December 2008.

Eric Allen, Mark W. Bailey, Rastislav Bodik, Kim B. Bruce, Kathleen Fisher, Stephen N. Freund, Robert Harper, Chandra Krintz, Shriram Krishnamurthi, James R. Larus, Doug Lea, Gary T. Leavens, Lori L. Pollock, Stuart Reges, Martin C. Rinard, Mark A. Sheldon, Franklyn A. Turbak, and Mitchell Wand. SIGPLAN Programming Language Curriculum Workshop: Discussion Summaries and Recommendations, In *SIGPLAN Programming Language Curriculum Workshop*, *SIGPLAN Notices* Volume 43, Number 11, November 2008.

Martin C. Rinard. Using Programming Language Concepts to Teach General Thinking Skills, In *SIGPLAN Programming Language Curriculum Workshop*, *SIGPLAN Notices* Volume 43, Number 11, November 2008.

Karen Zee, Viktor Kuncak, and Martin Rinard. Full Functional Verification of Linked Data Structures, In *Proceedings of 2008 ACM SIGPLAN Conference on Programming Language Design and Implementation*, Tucson, Arizona June 2008.

Karen Zee, Viktor Kuncak, and Martin Rinard. Verifying Linked Data Structure Implementations, In *NSF Next Generation Software (NGS) Workshop, IPDPV – IEEE International Parallel & Distributed Processing Symposium*, Miami, Florida April 2008.

Martin Rinard. Using Early Phase Termination to Eliminate Load Imbalances at Barrier Synchronization Points, In *Proceedings of 2007 ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications*, Montreal, Canada October 2007.

Huu Hai Nguyen and Martin Rinard. Detecting and Eliminating Memory Leaks Using Cyclic Memory Management, In *Proceedings of 2007 International Symposium on Memory Management*, Montreal, Canada October 2007.

Martin Rinard. Living in the Comfort Zone, In *Proceedings of 2007 ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications, Onwards! Session*, Montreal, Canada October 2007.

Viktor Kuncak and Martin Rinard. Towards Efficient Satisfiability Checking for Boolean Algebra with Presburger Arithmetic, In *Proceedings of 21st Conference on Automated Deduction (CADE-21)*, Bremen, Germany July 2007.

Bruno Marnette, Viktor Kuncak, and Martin Rinard. Polynomial Constraints for Sets with Cardinality Bounds, In *Proceedings of 10th International Conference on Foundations of Software Science and Computation Structures*, Braga, Portugal March 2007.

Thomas Weis, Viktor Kuncak, Karen Zee, Andreas Podelski, and Martin Rinard. Verifying Complex Properties Using Symbolic Shape Analysis, In *Proceedings of Workshop on Heap Abstraction and Verification (HAV 2007)*, Braga, Portugal March 2007.

Karen Zee, Viktor Kuncak, Michael Taylor, and Martin Rinard. Runtime Checking for Program Verification, In *Seventh Workshop on Runtime Verification (RV '07)*, Vancouver, British Columbia, Canada March 2007.

Charles Bouillaguet, Viktor Kuncak, Thomas Weis, Karen Zee, and Martin Rinard. Using First-Order Theorem Provers in the Jahob Data Structure Verification System, In *Eighth International Conference on Verification, Model Checking, and Abstract Interpretation*, Nice, France January 2007.

Viktor Kuncak, Patrick Lam, Karen Zee, and Martin Rinard. Modular Pluggable Analyses for Data Structure Consistency, In *IEEE Transactions on Software Engineering*, 32(12) December 2006.

Stefan Andrei, Wei-Ngan Chin, and Martin Rinard. Incremental Deterministic Planning, In *Proceedings of 8th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC '06)*, Timisoara, Romania September 2006.

Brian Demsky, Michael Ernst, Philip Guo, Stephen McCamant, Jeff Perkins, and Martin Rinard. Automatic Inference and Enforcement of Data Structure Consistency Specifications, In *International Symposium on Software Testing and Analysis (ISSTA 2006)*, Portland, Maine July 2006.

Martin Rinard. Probabilistic Accuracy Bounds for Fault-Tolerant Computations that Discard Tasks, In *20th ACM International Conference on Supercomputing*, Cairns, Australia June 2006.

Viktor Kuncak, Huu Hai Nguyen, and Martin Rinard. Deciding Boolean Algebra with Presburger Arithmetic, In *Journal of Automated Reasoning*, 36(3) April 2006.

Viktor Kuncak and Martin Rinard. An Overview of the Jahob Analysis System: Project Goals and Current Status, In *NSF Next Generation Software Workshop (held with the IEEE International Parallel and Distributed Processing Symposium)*, Rhodes, Greece April 2006.

Thomas Weis, Viktor Kuncak, Patrick Lam, Andreas Podelski, and Martin Rinard. Field Constraint Analysis, In *7th International Conference on Verification, Model Checking, and Static Analysis*, Charleston, SC January 2006.

Martin Rinard, Cristian Cadar, and Huu Hai Nguyen. Exploring the Acceptability Envelope, In *2005 ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications Companion (OOPSLA '05 Companion) Onwards! Session*, San Diego, CA October 2005.

C. Scott Ananian and Martin Rinard. Efficient Object-Based Software Transactions, In *Synchronization and Concurrency (SCOO) OOPSLA 2005 Workshop*, San Diego, CA October 2005.

Viktor Kuncak, Patrick Lam, Karen Zee, and Martin Rinard. Implications of a Data Structure Consistency Checking System, In *Verified Software: Theories, Tools, Experiments (VSTTE) IFIP Working Group 2.3 Conference*, Zurich, Switzerland October 2005.

Wei-Ngan Chin, Huu Hai Nguyen, Shengchao Qin, and Martin Rinard. Memory Usage Verification for OO Programs, In *Proceedings of Static Analysis: 12th International Symposium (SAS 2005)*, London, UK September 2005.

Viktor Kuncak, Huu Hai Nguyen, and Martin Rinard. An Algorithm for Deciding BAPA: Boolean Algebra with Presburger Arithmetic, In *Proceedings of the 20th Annual Conference on Automated Deduction (CADE-20)*, Tallinn, Estonia July 2005.

Darko Marinov, Sarfraz Khurshid, Suhabe Bugrara, Lintao Zhang, and Martin Rinard. Optimizations for Compiling Declarative Models into Boolean Formulas, In *Proceedings of the 8th International Conference on Theory and Applications of Satisfiability Testing (SAT 2005)*, St. Andrews, Scotland June 2005.

Brian Demsky and Martin Rinard. Data Structure Repair Using Goal-Directed Reasoning, In *Proceedings of the*

2005 International Conference on Software Engineering, St. Louis, Missouri May 2005.

Patrick Lam, Viktor Kuncak, and Martin Rinard. Hob: A Tool for Verifying Data Structure Consistency, In *Proceedings of the International Conference on Compiler Construction, Tool Demonstration Paper*, Edinburgh, Scotland, April 2005.

Patrick Lam, Viktor Kuncak, and Martin Rinard. Cross-cutting Techniques in Program Specification and Analysis, In *Proceedings of the 2005 International Conference on Aspect-Oriented Software Development*, Chicago, Illinois, March 2005.

Radu Rugina and Martin Rinard. Symbolic Bounds Analysis of Pointers, Array Indices, and Accessed Memory Regions, *ACM Transactions on Programming Languages and Systems*, 27(2) March 2005.

Viktor Kuncak and Martin Rinard. Decision Procedures for Set-Valued Fields, *1st International Workshop on Abstract Interpretation of Object-Oriented Languages (AIOOL 2005)*, Paris, France January 2005.

Patrick Lam, Viktor Kuncak, and Martin Rinard. Generalized Typestate Checking for Data Structure Consistency, In *Proceedings of the 6th International Conference on Verification, Model Checking and Abstract Interpretation*, Paris, France, January 2005.

Alexandru Salcianu and Martin Rinard. Purity and Side Effect Analysis for Java Programs, In *Proceedings of the 6th International Conference on Verification, Model Checking and Abstract Interpretation*, Paris, France, January 2005.

Martin Rinard, Cristian Cadar, Daniel Dumitran, Daniel M. Roy, Tudor Leu, and William S. Beebe, Jr. Enhancing Server Availability and Security Through Failure-Oblivious Computing, In *Proceedings of the 6th Symposium on Operating Systems Design and Implementation*, San Francisco, California December 2004.

Martin Rinard, Cristian Cadar, Daniel Dumitran, Daniel M. Roy, and Tudor Leu. A Dynamic Technique for Eliminating Buffer Overflow Vulnerabilities (and Other Memory Errors), In *Proceedings of the 2004 Annual Computer Security Applications Conference*, Tucson, Arizona, December 2004.

Konstantine Arkoudas, Karen Zee, Viktor Kuncak, and Martin Rinard. Verifying a File System Implementation, In *Proceedings of the Sixth International Conference on Formal Engineering Methods (ICFEM 2004)*, Seattle, Washington, November 2004.

Karen Zee, Patrick Lam, Viktor Kuncak, and Martin Rinard. Combining Theorem Proving With Static Analysis for Data Structure Consistency, In *Proceedings of the Second Workshop on Software Verification and Validation*, Seattle, Washington, November 2004.

Martin Rinard, Alexandru Salcianu, and Suhabe Bugrara. A Classification System and Analysis for Aspect-Oriented Programs, In *Proceedings of the Twelfth International Symposium on the Foundations of Software Engineering*, Newport Beach, California, November 2004.

Viktor Kuncak and Martin Rinard. Generalized Records and Spatial Conjunction in Role Logic, In *Proceedings of the 11th Annual International Static Analysis Symposium (SAS 2004)*, Verona, Italy, August 2004.

Wei-Ngan Chin, Florin Craciun, Shengchao Qin, and Martin Rinard. Region Inference for an Object-Oriented Language, In *Proceedings of the ACM SIGPLAN 2004 Conference on Programming Language Design and Implementation (PLDI 2004)*, Washington, DC, June 2004.

Brian Demsky, Cristian Cadar, Daniel Roy, and Martin C. Rinard. Efficient Specification-Assisted Error Localization, In *Proceedings of the Second International Workshop on Dynamic Analysis*, Edinburgh, Scotland, May 2004.

Konstantine Arkoudas and Martin Rinard. Deductive Runtime Certification. In *Proceedings of the 2004 Workshop on Runtime Verification (RV '04)*, Barcelona, Spain, April 2004.

Viktor Kuncak and Martin Rinard. Boolean Algebra of Shape Analysis Constraints. In *Proceedings of the 5th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI 2004)*, Venice, Italy, January 2004.

Brian Demsky and Martin Rinard. Static Specification Analysis for Termination of Specification-Based Data Structure Repair. In *Proceedings of the 14th IEEE International Symposium on Software Reliability*

Engineering, Denver, Colorado, November 2003.

Martin Rinard. Acceptability-Oriented Computing. In *Proceedings of the 2003 ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications Companion (OOPSLA '03 Companion)*, Anaheim, California, October 2003.

Brian Demsky and Martin Rinard. Automatic Detection and Repair of Errors in Data Structures. In *Proceedings of the 2003 ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA '03)*, Anaheim, California, October 2003.

Maria-Cristina Marinescu and Martin Rinard. A Formal Framework for Modular Synchronous System Design. In *Proceedings of the 12th International Formal Methods Europe Symposium*, Pisa, Italy, September 2003.

Patrick Lam and Martin Rinard. A Type System and Analysis for the Automatic Extraction and Enforcement of Design Information. In *Proceedings of the 2003 European Conference on Object-Oriented Programming (ECOOP 2003)*, Darmstadt, Germany, July 2003.

Viktor Kuncak and Martin Rinard. Structural Subtyping of Non-Recursive Types is Decidable. In *Proceedings of the Eighteenth Annual IEEE Symposium on Logic in Computer Science (LICS 2003)*, Ottawa, Canada, June 2003.

Viktor Kuncak and Martin Rinard. Existential Heap Abstraction Entailment is Undecidable. In *Proceedings of the 10th International Static Analysis Symposium*, San Diego, California, June 2003.

Brian Demsky and Martin Rinard. Automatic Data Structure Repair for Self-Healing Systems. In *Proceedings of the First Workshop on Algorithms and Architectures for Self-Managed Systems*, San Diego, California, June 2003.

C. Scott Ananian and Martin Rinard. Data Size Optimizations for Java Programs. In *2003 Workshop on Languages, Compilers, and Tools for Embedded Systems (LCTES 2003)*, San Diego, California, June 2003.

Chandrasekhar Boyapati, Alexandru Salcianu, William Beebe, and Martin C. Rinard. Ownership Types for Safe Region-Based Memory Management in Real-Time Java. In *Proceedings of the ACM SIGPLAN 2003 Conference on Programming Language Design and Implementation*, San Diego, California, June 2003.

Martin C. Rinard and Pedro Diniz. Eliminating Synchronization Bottlenecks Using Adaptive Replication. In *ACM Transactions on Programming Languages and Systems*, 25(3), pp. 316-359, May 2003.

Konstantine Arkoudas, Sarfraz Khurshid, Darko Marinov, and Martin Rinard. Integrating Model Checking and Theorem Proving for Relational Reasoning. In *7th International Seminar on Relational Methods in Computer Science (RelMiCS 2003)*, Malente, Germany, May 2003.

Jianjun Zhao and Martin C. Rinard. Pipa: A Behavioral Interface Specification Language for AspectJ. In *Proceedings of FASE 2003, Fundamental Approaches to Software Engineering*, Warsaw, Poland, April 2003.

Ovidiu Gheorghioiu, Alexandru Salcianu, and Martin C. Rinard. Interprocedural Compatability Analysis for Static Object Preallocation. In *Proceedings of the 30th Annual ACM Symposium on Principles of Programming Languages*, New Orleans, Louisiana, January 2003.

Martin C. Rinard. Credible Compilation. *Singapore-MIT Alliance 2003 Symposium*, Singapore, January 2003.

Radu Rugina and Martin C. Rinard. Pointer Analysis for Structured Parallel Programs. In *ACM Transactions on Programming Languages and Systems*, 25(1), pp. 1-47, January 2003.

Chandrasekhar Boyapati, Robert Lee, and Martin C. Rinard. Ownership Types for Safe Programming: Preventing Data Races and Deadlocks. In *Proceedings of the 2002 ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications*, Seattle, Washington, November 2002.

Karen Zee and Martin C. Rinard. Write Barrier Removal by Static Analysis. In *Proceedings of the 2002 ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications*, Seattle, Washington, November 2002.

Brian Demsky and Martin C. Rinard. Role-Based Exploration of Object-Oriented Programs. In *Proceedings of the 2002 International Conference on Software Engineering*, Orlando, Florida, May 2002.

- Karen Zee and Martin C. Rinard. Write Barrier Removal by Static Analysis. In *ACM SIGPLAN Notices*, 37(4), April 2002.
- Viktor Kuncak, Patrick Lam, and Martin C. Rinard. Role Analysis. In *Proceedings of the 29th Annual ACM Symposium on Principles of Programming Languages*, Portland, Oregon, January 2002.
- Maria-Cristina Marinescu and Martin C. Rinard. High-Level Synthesis of Pipelined Circuits from Modular Queue-Based Specifications. In *Transactions of the Institute of Electronics, Information, and Communication Engineers (IEICE), Special Section on VLSI and CAD Algorithms*, E84-A (11), pp. 2655-2664, November 2001.
- Chandrasekar Boyapati and Martin C. Rinard. A Parameterized Type System for Race-Free Java Programs. In *Proceedings of the 16th Annual ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications*, Tampa Bay, Florida, October 2001.
- William S. Beebe and Martin C. Rinard. An Implementation of Scoped Memory for Real-Time Java. In *Proceedings of EMSOFT 2001: First International Workshop on Embedded Software*, Tahoe City, California, October 2001.
- Maria-Cristina Marinescu and Martin C. Rinard. High-Level Automatic Pipelining of Sequential Circuits. In *Proceedings of the 14th International Symposium on System Synthesis (ISSS 2001)*, Montreal, Canada, October 2001.
- Viktor Kuncak, Patrick Lam, and Martin C. Rinard. A Language for Role Specifications. In *Proceedings of the Fourteenth International Workshop on Languages and Compilers for Parallel Computing*, Cumberland Falls, Kentucky, August 2001.
- Martin C. Rinard. Analysis of Multithreaded Programs. In *Proceedings of the 8th Static Analysis Symposium*, Paris, France, July 2001.
- Frederic Vivien and Martin C. Rinard. Incrementalized Pointer and Escape Analysis. In *Proceedings of the ACM SIGPLAN 2001 Conference on Programming Language Design and Implementation*, Snowbird, Utah, June 2001.
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