Atanas (Nasko) Rountev
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Education

Rutgers University, New Brunswick, New Jersey, 9/1995 – 8/2002
Ph.D. in Computer Science, 8/2002 (GPA 4.0/4.0)
Technical University, Sofia, Bulgaria, 9/1990 – 7/1995
B.S. in Computer Science and Engineering, 7/1995

Professional Experience

The Ohio State University, Department of Computer Science and Engineering
Full Professor, 9/2015 − present
Associate Professor, 10/2008 – 8/2015
Assistant Professor, 10/2002 – 9/2008
Bell Laboratories, Lucent Technologies, Software Production Research Department
Member of Technical Staff, 6/1999 – 8/1999
Siemens Corporate Research, Software Engineering Research Department
Visiting Researcher, 6/1998 – 8/1997

Research Interests

Programming languages; compilers; software engineering; static and dynamic program analysis; high-performance computing; privacy-preserving software analysis; software understanding and testing

Publications

Major areas of recent work are *privacy-preserving software analysis* [ECOOP21, OOPSLA20, ICSME20, Security20, CC20, SCAM19, SWAN18] and *analysis and testing of software for Android devices* [SQJ20, FSE18, JASE18, MobileSoft18, AST18, ICSE17, MobileSoft17, SOAP16, MobileSoft16, AST16, CC16, ASE15, ICSE15, CGO14-1, ISSRE13, MOBS13].

Collaborative work has been focused on *high-performance computing* [SC23, CC22, CGO22, SPAA21, PLDI21, ASPLOS20, SC19, IPDPS19, CGO19, SC18, IEEE18, PPoPP18, PACT16, WOLFHPC15, PPoPP15, TOPC14, TACO13, SC12, PLDI12, HiPC11, ICSM10, PACT09, PPoPP09, SC08, ICS08, CC08-2, PPoPP08, PLDI07, HIPS07, SC06, ICCS06].

Other areas of interest include *dynamic and static analysis of performance inefficiencies (e.g., bloat and leaks)* [TOSEM14, CGO14-2, TOSEM13, WODA12, ECOOP12, ICSE12, PLDI11, FOSER10, PLDI10-1, PLDI10-2, PLDI09, ICSE08], *static analysis of pointers and side effects* [ISSSTA11, ECOOP09, ISSTA08, ETX06, SCAM06, SAVCBS05, TOSEM05, JASE04, SCAM02, ISSTA02, OOPSLA01, PLDI00], *static analysis of component-based software* [SOAP12, CC08-1, CC06, TSE06, ICSM05, ETX05, CBSE05, TSE04, ICSM04, ICSE03, CC01, FSE99], analyses for *model-based understanding and testing* [ICSE05, FASE05, PASTE05, VISSOFT05, ICSM02], and various other program analyses for *software understanding, testing, and debugging* [SCAM11, JASE09, AOSD08, FSE07, ICSE07, ICSM07, WODA07, SCAM07, ISSTA04, PASTE04].

Research advisees/co-advisees at the time of publication are underlined.

[SC23] 1. Martin Kong, Raneem Abu Yosef, Atanas Rountev, and P. Sadayappan, "Automatic Generation of Distributed-Memory Mappings for Tensor Computations", International Conference for High Performance Computing Networking, Storage, and Analysis (SC'23), November 2023.

[CC22] 2. Yufan Xu, Saurabh Raje, Atanas Rountev, Gerald Sabin, Aravind Sukumaran-Rajam, and P. Sadayappan, "Training of Deep Learning Pipelines on Memory-Constrained GPUs via Segmented Fused-Tiled Execution", ACM SIGPLAN International Conference on Compiler Construction, April 2022.

[CGO22] 3. Miheer Vaidya, Aravind Sukumaran-Rajam, Atanas Rountev, and P. Sadayappan, "Comprehensive Accelerator-Dataflow Co-design Optimization for Convolutional Neural Networks", International Symposium on Code Generation and Optimization, April 2022.

[SPAA21] 4. Rui Li, Yufan Xu, Aravind Sukumaran-Rajam, Atanas Rountev, and P. Sadayappan, "Brief Announcement: Efficient Distributed Algorithms for Convolutional Neural Networks", ACM Symposium on Parallelism in Algorithms and Architectures, July 2021.

[ECOOP21] 5. Yu Hao*, Sufian Latif*, Hailong Zhang, Raef Bassily, and Atanas Rountev (*co-leads with equal contributions), "Differential Privacy for Coverage Analysis of Software Traces", European Conference on Object-Oriented Programming, July 2021.

[PLDI21] 6. Auguste Olivry, Guillaume Iooss, Nicolas Tollenaere, Atanas Rountev, P. Sadayappan, and Fabrice Rastello, "IOOPT: Automatic Derivation of I/O Complexity Bounds for Affine Programs", ACM SIGPLAN Conference on Programming Language Design and Implementation, June 2021.

[ASPLOS21] 7. Rui Li, Yufan Xu, Aravind Sukumaran-Rajam, Atanas Rountev, and P. Sadayappan, "Analytical Characterization and Design Space Exploration for Optimization of CNNs", ACM International Conference on Architectural Support for Programming Languages and Operating Systems, April 2021.

[OOPSLA20] 8. Hailong Zhang, Yu Hao, Sufian Latif, Raef Bassily, and Atanas Rountev, "Differentially-Private Software Frequency Profiling under Linear Constraints", ACM SIGPLAN Conference on Systems, Programming, Languages, and Applications: Software for Humanity (SPLASH/OOPSLA), November 2020.

[ICSME20] 9. Sufian Latif, Yu Hao, Hailong Zhang, Raef Bassily, and Atanas Rountev, "Introducing Differential Privacy Mechanisms for Mobile App Analytics of Dynamic Content", IEEE International Conference on Software Maintenance and Evolution, September 2020.

[Security20] 10. Hailong Zhang, Sufian Latif, Raef Bassily, and Atanas Rountev, "Differentially-Private Control-Flow Node Coverage for Software Usage Analysis", USENIX Security Symposium, August 2020.

[SQJ20] 11. Haowei Wu*, Hailong Zhang*, Yan Wang, and Atanas Rountev (*co-leads with equal contributions), "Sentinel: Generating GUI Tests for Sensor Leaks in Android and Android Wear Apps", Software Quality Journal, March 2020.

[CC20] 12. Hailong Zhang, Yu Hao, Sufian Latif, Raef Bassily, and Atanas Rountev, "A Study of Event Frequency Profiling with Differential Privacy", ACM SIGPLAN International Conference on Compiler Construction, February 2020.

[SC19] 13. Rui Li, Aravind Sukumaran-Rajam, Richard Veras, Tze Meng Low, Fabrice Rastello, Atanas Rountev, and P. Sadayappan, "Analytical Cache Modeling and Tilesize Optimization for Tensor Contractions", International Conference for High Performance Computing Networking, Storage, and Analysis, November 2019.

[SCAM19] 14. Hailong Zhang, Sufian Latif, Raef Bassily, and Atanas Rountev, "Introducing Privacy in Screen Event Frequency Analysis for Android Apps", IEEE International Working Conference on Source Code Analysis and Manipulation, September 2019.

[IPDPS19] 15. Prashant Singh Rawat, Miheer Vaidya, Aravind Sukumaran-Rajam, Atanas Rountev, Louis-Noel Pouchet, and P. Sadayappan, "On Optimizing Complex Stencils on GPUs", IEEE Parallel & Distributed Processing Symposium, May 2019.

[CGO19] 16. Jinsung Kim, Aravind Sukumaran-Rajam, Vineeth Thumma, Sriram Krishnamoorthy, Ajay Panyala, Louis-Noel Pouchet, Atanas Rountev, and P. Sadayappan, "A Code Generator for High-Performance Tensor Contractions on GPUs", International Symposium on Code Generation and Optimization, February 2019.

[FSE18] 17. Hailong Zhang, Haowei Wu, and Atanas Rountev, "Detection of Energy Inefficiencies in Android Wear Watch Faces", ACM SIGSOFT Symposium on the Foundations of Software Engineering, November 2018.

[SWAN18] 18. Hailong Zhang, Sufian Latif, Raef Bassily, and Atanas Rountev, "Differentially-Private Software Analytics for Mobile Apps: Opportunities and Challenges", International Workshop on Software Analytics, November 2018.

[SC18] 19. Prashant Rawat, Aravind Sukumaran-Rajam, Atanas Rountev, Fabrice Rastello, Louis-Noel Pouchet, and P. Sadayappan, "Associative Instruction Reordering to Alleviate Register Pressure", International Conference for High Performance Computing, Networking, Storage and Analysis, November 2018.

[IEEE18] 20. Prashant Rawat, Miheer Vaidya, Aravind Sukumaran-Rajam, Mahesh Ravishankar, Vinod Grover, Atanas Rountev, Louis-Noel Pouchet, and P. Sadayappan, "Domain-Specific Optimization and Generation of High-Performance GPU Code for Stencil Computations", Proceedings of the IEEE, special issue on DSLs, November 2018.

[JASE18] 21. Shengqian Yang, Haowei Wu, Hailong Zhang, Yan Wang, Chandrasekar Swaminathan, Dacong Yan, and Atanas Rountev, "Static Window Transition Graphs for Android", International Journal of Automated Software Engineering, June 2018. Special issue containing invited papers from ASE'15.

[MobileSoft18] 22. Yan Wang , Haowei Wu, Hailong Zhang, and Atanas Rountev, "Orlis: Obfuscation-Resilient Library Detection for Android", IEEE/ACM International Conference on Mobile Software Engineering and Systems, May 2018.

[AST18] 23. Haowei Wu, Yan Wang, and Atanas Rountev, "Sentinel: Generating GUI Tests for Android Sensor Leaks", IEEE/ACM International Workshop on Automation of Software Test, May 2018.

[PPoPP18] 24. Prashant Rawat, Aravind Sukumaran-Rajam, Atanas Rountev, Fabrice Rastello, Louis-Noel Pouchet, and P. Sadayappan, "Register Optimizations for Stencils on GPUs", ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, February 2018.

[ICSE17] 25. Hailong Zhang and Atanas Rountev, "Analysis and Testing of Notifications in Android Wear Applications", International Conference on Software Engineering, May 2017.

[MobileSoft17] 26. Yan Wang and Atanas Rountev, "Who Changed You? Obfuscator Identification for Android", IEEE/ACM International Conference on Mobile Software Engineering and Systems, May 2017. Nominated for a best paper award.

[PACT16] 27. Prashant Rawat, Changwan Hong, Mahesh Ravishankar, Vinod Grover, Louis-Noel Pouchet, Atanas Rountev, and P. Sadayappan, "Resource Conscious Reuse-Driven Tiling for GPUs", International Conference on Parallel Architectures and Compilation Techniques, September 2016.

[SOAP16] 28. Yan Wang, Hailong Zhang, and Atanas Rountev, "On the Unsoundness of Static Analysis for Android GUIs", ACM SIGPLAN International Workshop on the State Of the Art in Program Analysis, June 2016.

[MobileSoft16] 29. Yan Wang and Atanas Rountev, "Profiling the Responsiveness of Android Applications via Automated Resource Amplification", IEEE/ACM International Conference on Mobile Software Engineering and Systems, May 2016.

[AST16] 30. Hailong Zhang, Haowei Wu, and Atanas Rountev, "Automated Test Generation for Detection of Leaks in Android Applications", IEEE/ACM International Workshop on Automation of Software Test, May 2016.

[CC16] 31. Haowei Wu, Shengqian Yang, and Atanas Rountev, "Static Detection of Energy Defect Patterns in Android Applications", International Conference on Compiler Construction,

March 2016.

[WOLFHPC15] 32. Prashant Rawat, Martin Kong, Tom Henretty, Justin Holewinski, Kevin Stock, Louis-Noel Pouchet, J. Ramanujam, Atanas Rountev, and P. Sadayappan, "SDSLc: a Multi-Target Domain-Specific Compiler for Stencil Computations", International Workshop on Domain-Specific Languages and High-Level Frameworks for High Performance, November 2015.

[ASE15] 33. Shengqian Yang, Hailong Zhang, Haowei Wu, Yan Wang, Dacong Yan, and Atanas Rountev, "Static Window Transition Graphs for Android", IEEE/ACM International Conference on Automated Software Engineering, November 2015. (289 submitted, 60 accepted, 21% acceptance rate)

[ICSE15] 34. Shengqian Yang, Dacong Yan, Haowei Wu, Yan Wang, and Atanas Rountev, "Static Control-Flow Analysis of User-Driven Callbacks in Android Applications", International Conference on Software Engineering, May 2015. (452 submitted, 84 accepted, 18.5% acceptance rate)

[PPoPP15] 35. Mahesh Ravishankar, Roshan Dathatri, Venmugil Elango, Louis-Noel Pouchet, J. Ramanujam, Atanas Rountev, and P. Sadayappan, "Distributed Memory Code Generation for Mixed Irregular/Regular Computations", ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, February 2015. (133 submitted, 23 accepted, 17% acceptance rate)

[TOSEM14] 36. Guoqing Xu, Nick Mitchell, Matthew Arnold, Atanas Rountev, Edith Schonberg, and Gary Sevitsky, "Scalable Runtime Bloat Detection Using Abstract Dynamic Slicing", ACM Transactions on Software Engineering, volume 23, number 3, pages 23:1-23:50, May 2014.

[TOPC14] 37. Mahesh Ravishankar, John Eisenlohr, Louis-Noel Pouchet, J. Ramanujam, Atanas Rountev, and P. Sadayappan, "Automatic Parallelization of a Class of Irregular Loops for Distributed Memory Systems", ACM Transactions on Parallel Computing, volume 1, number 1, pages 7:1-7:37, October 2014.

[CGO14-1] 38. Atanas Rountev and Dacong Yan, "Static Reference Analysis for GUI Objects in Android Software", International Symposium on Code Generation and Optimization, pages 87-97, February 2014. (103 submitted, 29 accepted, 28% acceptance rate)

[CGO14-2] 39. Dacong Yan, Guoqing Xu, Shengqian Yang, and Atanas Rountev, "LeakChecker: Practical Static Memory Leak Detection for Managed Languages", International Symposium on Code Generation and Optimization, pages 87-97, February 2014. (103 submitted, 29 accepted, 28% acceptance rate)

[TACO13] 40. Naznin Fauzia, Venmugil Elango, Mahesh Ravishankar, J. Ramanujam, Fabrice Rastello, Atanas Rountev, Louis-Noel Pouchet, and P. Sadayappan, "Beyond Reuse Distance Analysis: Dynamic Analysis for Characterization of Data Locality Potential", ACM Transactions on Architecture and Code Optimization, volume 10, number 4, pages 53:1-53:29, December 2013.

[ISSRE13] 41. Dacong Yan, Shengqian Yang, and Atanas Rountev, "Systematic Testing for Resource Leaks in Android Applications", IEEE International Symposium on Software Reliability Engineering, pages 411-420, November 2013. (131 submitted, 46 accepted, 35% acceptance rate)

[TOSEM13] 42. Guoqing Xu and Atanas Rountev, "Precise Memory Leak Detection for Java Software Using Container Profiling", ACM Transactions on Software Engineering and Methodology, volume 22, number 3, pages 17:1-17:28, July 2013.

[MOBS13] 43. Shengqian Yang, Dacong Yan, and Atanas Rountev, "Testing for Poor Responsiveness in Android Applications", Workshop on Engineering Mobile-Enabled Systems, pages 1-6, May 2013.

[SC12] 44. Mahesh Ravishankar, John Eisenlohr, Louis-Noel Pouchet, J. Ramanujam, Atanas Rountev, and P. Sadayappan, "Code Generation for Parallel Execution of a Class of Irregular Loops on Distributed Memory Systems", International Conference for High Performance Computing, Networking, Storage and Analysis, page 72, November 2012. (472 submitted, 100 accepted, 21% acceptance rate)

[WODA12] 45. Shengqian Yang, Dacong Yan, and Atanas Rountev, "Dynamic Analysis of

Inefficiently-Used Containers", International Workshop on Dynamic Analysis, pages 30-35, July 2012.

[ECOOP12] 46. Guoqing Xu, Dacong Yan, and Atanas Rountev, "Static Detection of Loop-Invariant Data Structures", European Conference on Object-Oriented Programming, pages 738-763, June 2012. (140 submitted, 30 accepted, 21% acceptance rate)

[PLDI12] 47. Justin Holewinski, Ragavendar Ramamurthi, Mahesh Ravishankar, Naznin Fauzia, Louis-Noel Pouchet, Atanas Rountev, and P. Sadayappan, "Dynamic Trace-Based Analysis of Vectorization Potential of Applications", ACM SIGPLAN Conference on Programming Language Design and Implementation, pages 371-382, June 2012. (255 submitted, 48 accepted, 19% acceptance rate)

[SOAP12] 48. Dacong Yan, Guoqing Xu, and Atanas Rountev, "Rethinking Soot for Summary-Based Whole-Program Analysis", ACM SIGPLAN Workshop on the State Of the Art in Java Program Analysis, pages 9-13, June 2012.

[ICSE12] 49. Dacong Yan, Guoqing Xu, and Atanas Rountev, "Uncovering Performance Problems in Java Applications with Reference Propagation Profiling", International Conference on Software Engineering, pages 134-144, June 2012. (408 submitted, 87 accepted, 21% acceptance rate)

[HiPC11] 50. Sanket Tavarageri, Louis-Noel Pouchet, J. Ramanujam, Atanas Rountev, and P. Sadayappan, "Dynamic Selection of Tile Sizes", IEEE International Conference on High Performance Computing, pages 1-10, December 2011. (206 submitted, 40 accepted, 19% acceptance rate)

[SCAM11] 51. Jason Sawin and Atanas Rountev, "Assumption Hierarchy for a CHA Call Graph Construction Algorithm", IEEE International Working Conference on Source Code Analysis and Manipulation, pages 35-44, September 2011. (52 submitted, 16 accepted, 31% acceptance rate)

[ISSTA11] 52. Dacong Yan, Guoqing Xu, and Atanas Rountev, "Demand-Driven Context-Sensitive Alias Analysis for Java", ACM SIGSOFT International Symposium on Software Testing and Analysis, pages 155-165, July 2011. (121 submitted, 35 accepted, 29% acceptance rate)

[PLDI11] 53. Guoqing Xu, Michael D. Bond, Feng Qin, and Atanas Rountev, "LeakChaser: Helping Programmer Narrow Down Causes of Memory Leaks", ACM SIGPLAN Conference on Programming Language Design and Implementation, pages 270-282, June 2011. (236 submitted, 55 accepted, 23% acceptance rate)

[FOSER10] 54. Guoqing Xu, Nick Mitchell, Matthew Arnold, Atanas Rountev, and Gary Sevitsky, "Software Bloat Analysis: Finding, Removing, and Preventing Performance Problems in Modern Large-Scale Object-Oriented Applications", FSE/SDP Workshop on the Future of Software Engineering Research, pages 421-426, November 2010. (139 submitted, 87 accepted, 63% acceptance rate)

[ICSM10] 55. Atanas Rountev, Kevin Van Valkenburgh, Dacong Yan, and P. Sadayappan, "Understanding Parallelism-Inhibiting Dependences in Sequential Java Programs", IEEE International Conference on Software Maintenance, pages 1-9, September 2010. (133 submitted, 36 accepted, 27% acceptance rate)

[PLDI10-1] 56. Guoqing Xu, Nick Mitchell, Matthew Arnold, Atanas Rountev, Edith Schonberg, and Gary Sevitsky, "Finding Low-Utility Data Structures", ACM SIGPLAN Conference on Programming Language Design and Implementation, pages 174-186, June 2010. (204 submitted, 41 accepted, 20% acceptance rate)

[PLDI10-2] 57. Guoqing Xu and Atanas Rountev, "Detecting Inefficiently-Used Containers to Avoid Bloat", ACM SIGPLAN Conference on Programming Language Design and Implementation, pages 160-173, June 2010. (204 submitted, 41 accepted, 20% acceptance rate)

[PACT09] 58. Qingda Lu, Christophe Alias, Uday Bondhugula, Thomas Henretty, Sriram Krishnamoorthy, J. Ramanujam, Atanas Rountev, P. Sadayappan, Yongjian Chen, Haibo Lin, and Tin-Fook Ngai, "Data Layout Transformation for Enhancing Data Locality on NUCA Chip Multiprocessors", International Conference on Parallel Architectures and Compilation Techniques, pages 348-357, September 2009. (188

submitted, 34 accepted, 18% acceptance rate)

[ECOOP09] 59. Guoqing Xu, Atanas Rountev, and Manu Sridharan, "Scaling CFL-Reachability-Based Points-to Analysis Using Context-Sensitive Must-Not-Alias Analysis", European Conference on Object-Oriented Programming, pages 98-122, July 2009. (117 submitted, 25 accepted, 21% acceptance rate)

[PLDI09] 60. Guoqing Xu, Matthew Arnold, Nick Mitchell, Atanas Rountev, and Gary Sevitsky, "Go with the Flow: Profiling Copies to Find Runtime Bloat", ACM SIGPLAN Conference on Programming Language Design and Implementation, pages 419-430, June 2009. (194 submitted, 41 accepted, 21% acceptance rate)

[JASE09] 61. Jason Sawin and Atanas Rountev, "Improving Static Resolution of Dynamic Class Loading in Java Using Dynamically Gathered Environment Information", International Journal on Automated Software Engineering, volume 16, number 2, pages 357-381, June 2009. **Special issue containing the best papers** from the IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM07). Extensive revision and expansion of the conference paper.

[PPoPP09] 62. Muthu Baskaran, Nagavijayalakshmi Vydyanathan, Uday Bondhugula, J. Ramanujam, Atanas Rountev, and P. Sadayappan, "Compiler-Assisted Dynamic Scheduling for Effective Parallelization of Loop Nests on Multicore Processors", ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, pages 219-228, February 2009. (109 submitted, 26 accepted, 24% acceptance rate)

[SC08] 63. D. Brian Larkins, James Dinan, Sriram Krishnamoorthy, Srinivasan Parthasarathy, Atanas Rountev, and P. Sadayappan, "Global Trees: A Framework for Linked Data Structures on Distributed Memory Parallel Systems", International Conference for High Performance Computing, Networking, Storage and Analysis, page 57, November 2008. (277 submitted, 59 accepted, 21% acceptance rate)

[ISSTA08] 64. Guoqing Xu and Atanas Rountev, "Merging Equivalent Contexts for Scalable Heap-Cloning-Based Context-Sensitive Points-to Analysis", ACM SIGSOFT International Symposium on Software Testing and Analysis, pages 225-236, July 2008. (100 submitted, 26 accepted, 26% acceptance rate)

[ICS08] 65. Muthu Baskaran, Uday Bondhugula, J. Ramanujam, Atanas Rountev, and P. Sadayappan, "A Compiler Framework for Optimization of Affine Loop Nests for GPGPUs", ACM International Conference on Supercomputing, pages 225-234, June 2008. (140 submitted, 37 accepted, 26% acceptance rate).

[ICSE08] 66. Guoqing Xu and Atanas Rountev, "Precise Memory Leak Detection for Java Software Using Container Profiling", International Conference on Software Engineering, pages 151-160, May 2008. (371 submitted, 56 accepted, 15% acceptance rate). **ACM SIGSOFT Distinguished Paper Award**.

[AOSD08] 67. Guoqing Xu and Atanas Rountev, "AJANA: A General Framework for Source-Code-Level Interprocedural Dataflow Analysis of AspectJ Software", International Conference on Aspect-Oriented Software Development, pages 36-47, April 2008. (79 submitted, 17 accepted, 22% acceptance rate)

[CC08-1] 68. Atanas Rountev, Mariana Sharp, and Guoqing Xu, "IDE Dataflow Analysis in the Presence of Large Object-Oriented Libraries", International Conference on Compiler Construction, pages 53-68, April 2008. (71 submitted, 18 accepted, 25% acceptance rate)

[CC08-2] 69. Uday Bondhugula, Muthu Baskaran, Sriram Krishnamoorthy, J. Ramanujam, Atanas Rountev, and P. Sadayappan, "Automatic Transformations for Communication-Minimized Parallelization and Locality Optimization in the Polyhedral Model", International Conference on Compiler Construction, pages 132-146, April 2008. (71 submitted, 18 accepted, 25% acceptance rate)

[PPoPP08] 70. Muthu Baskaran, Uday Bondhugula, Sriram Krishnamoorthy, J. Ramanujam, Atanas Rountev, and P. Sadayappan, "Automatic Data Movement and Computation Mapping for Multi-level Parallel Architectures with Explicitly Managed Memories", ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, pages 1-10, February 2008. (102 submitted, 25 accepted, 25% acceptance rate)

[ICSM07] 71. Raffi Khatchadourian, Jason Sawin, and Atanas Rountev, "Automated Refactoring of Legacy Java Software to Enumerated Types", IEEE International Conference on Software Maintenance, pages 224-233, October 2007. (214 submitted, 46 accepted, 21% acceptance rate)

[SCAM07] 72. Jason Sawin and Atanas Rountev, "Improved Static Resolution of Dynamic Class Loading in Java", IEEE International Working Conference on Source Code Analysis and Manipulation, pages 143-154, October 2007. (74 submitted, 19 accepted, 26% acceptance rate)

[FSE07] 73. Guoqing Xu, Atanas Rountev, Yan Tang, and Feng Qin, "Efficient Checkpointing of Java Software Using Context-Sensitive Capture and Replay", ACM SIGSOFT Symposium on the Foundations of Software Engineering, pages 85-94, September 2007. (251 submitted, 43 accepted, 17% acceptance rate)

[PLDI07] 74. Sriram Krishnamoorthy, Muthu Baskaran, Uday Bondhugula, J. Ramanujam, Atanas Rountev, and P. Sadayappan, "Effective Automatic Parallelization of Stencil Computations", ACM SIGPLAN Conference on Programming Language Design and Implementation, pages 235-244, June 2007. (178 submitted, 45 accepted, 25% acceptance rate)

[ICSE07] 75. Guoqing Xu and Atanas Rountev, "Regression Test Selection for AspectJ Software", International Conference on Software Engineering, pages 65-74, May 2007. (335 submitted, 49 accepted, 15% acceptance rate). Nominated for an ACM SIGSOFT Distinguished Paper Award.

[WODA07] 76. Alexandar Pantaleev and Atanas Rountev, "Identifying Data Transfer Objects in EJB Applications", Fifth International Workshop on Dynamic Analysis, p.5, May 2007. (11 submitted, 6 accepted, 54% acceptance rate)

[HIPS07] 77. Rajkiran Panuganti, Muthu Baskaran, Ashok Krishnamurthy, Jarek Nieplocha, Atanas Rountev, and P. Sadayappan, "An Efficient Distributed Shared Memory Toolbox for MATLAB", 12th International Workshop on High-Level Parallel Programming Models and Supportive Environments, March 2007. (15 submitted, 11 accepted, 73% acceptance rate).

[SC06] 78. Sriram Krishnamoorthy, Umit Catalyurek, Jarek Nieplocha, Atanas Rountev, and P. Sadayappan, "Hypergraph Partitioning for Automated Memory Management", International Conference for High Performance Computing, Networking, Storage and Analysis, p. 34, November 2006. (239 submitted, 54 accepted, 23% acceptance rate)

[ETX06] 79. Jason Sawin, Mariana Sharp, and Atanas Rountev, "Generating Run-Time Progress Reports for a Points-to Analysis in Eclipse", Eclipse Technology Exchange Workshop at OOPSLA, pages 40-44, October 2006. (30 submitted, 17 accepted, 57% acceptance rate)

[SCAM06] 80. Jason Sawin and Atanas Rountev, "Estimating the Run-Time Progress of a Call Graph Construction Algorithm", IEEE International Workshop on Source Code Analysis and Manipulation, pages 53-62, September 2006. (49 submitted, 20 accepted, 41% acceptance rate)

[TSE06] 81. Mariana Sharp and Atanas Rountev, "Static Analysis of Object References in RMI-based Java Software", IEEE Transactions on Software Engineering, volume 32, number 9, pages 664-681, September 2006. **Special issue containing the best papers** from the IEEE International Conference on Software Maintenance (ICSM05). The journal paper has extensive revisions and significant amount of new content.

[ICCS06] 82. Albert Hartono, Qingda Lu, Xiaoyang Gao, Sriram Krishnamoorthy, Marcel Nooijen, Gerald Baumgartner, Venkatesh Choppella, David Bernholdt, Russell Pitzer, J. Ramanujam, Atanas Rountev, and P. Sadayappan, "Identifying Cost-Effective Common Subexpressions to Reduce Operation Count in Tensor Contraction Evaluations", International Conference on Computational Science, pages 267-275, May 2006. (300 submitted, 98 accepted, 33% acceptance rate)

[CC06] 83. Atanas Rountev, Scott Kagan, and Thomas Marlowe, "Interprocedural Dataflow Analysis in the Presence of Large Libraries", International Conference on Compiler Construction, pages 2-16, March 2006. (72 submitted, 17 accepted, 24% acceptance

rate).

[ETX05] 84. Mariana Sharp, Jason Sawin, and Atanas Rountev, “Building a Whole-Program Type Analysis in Eclipse”, Eclipse Technology Exchange Workshop at OOPSLA, pages 6-10, October 2005. (47 submitted, 27 accepted, 57% acceptance rate)

[ICSM05] 85. Mariana Sharp and Atanas Rountev, “Static Analysis of Object References in RMI-based Java Software”, IEEE International Conference on Software Maintenance, pages 101-110, September 2005. (180 submitted, 55 accepted, 31% acceptance rate)

[PASTE05] 86. Atanas Rountev, Olga Volgin, and Miriam Reddoch, “Static Control-Flow Analysis for Reverse Engineering of UML Sequence Diagrams”, ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering, pages 96-102, September 2005. (38 submitted, 17 accepted, 45% acceptance rate).

[VISSOFT05] 87. Richard Sharp and Atanas Rountev, “Interactive Exploration of UML Sequence Diagrams”, IEEE Workshop on Visualizing Software for Understanding and Analysis, pages 8-13, September 2005. . (26 submitted, 19 accepted, 73% acceptance rate)

[SAVCBS05] 88. Gregory Kulczycki, Murali Sitaraman, Bruce Weide, and Atanas Rountev, “A Specification-based Approach to Reasoning about Pointers”, International Workshop on Specification and Verification of Component-Based Systems, pages 55-62, September 2005. (acceptance rate unknown)

[ICSE05] 89. Atanas Rountev and Beth Harkness Connell, “Object Naming Analysis for Reverse-Engineered Sequence Diagrams”, International Conference on Software Engineering, pages 254-263, May 2005. (313 submitted, 44 accepted, 14% acceptance rate)

[CBSE05] 90. Atanas Rountev, “Component-Level Dataflow Analysis”, International SIGSOFT Symposium on Component-Based Software Engineering, pages 82-89, May 2005. (91 submitted, 23 accepted, 25% acceptance rate)

[FASE05] 91. Atanas Rountev, Scott Kagan, and Jason Sawin, “Coverage Criteria for Testing of Object Interactions in Sequence Diagrams”, Fundamental Approaches to Software Engineering, pages 282-297, April 2005. (99 submitted, 22 accepted, 22% acceptance rate).

[TOSEM05] 92. Ana Milanova, Atanas Rountev, and Barbara G. Ryder, "Parameterized Object Sensitivity for Points-to Analysis for Java", ACM Transactions on Software Engineering and Methodology, volume 14, number 1, pages 1-41, January 2005. Invited for fast-track journal submission by the Program Committee of ISSTA02. A major expansion/revision of the original conference paper.

[ICSM04] 93. Atanas Rountev, “Precise Identification of Side-effect-free Methods in Java”, IEEE International Conference on Software Maintenance, pages 82-91, September 2004. (122 submitted, 38 accepted, 31% acceptance rate)

[ISSTA04] 94. Atanas Rountev, Scott Kagan, and Michael Gibas, “Static and Dynamic Analysis of Call Chains in Java”, ACM SIGSOFT International Symposium on Software Testing and Analysis, pages 1-11, July 2004. (93 submitted, 26 accepted, 28% acceptance rate)

[TSE04] 95. Atanas Rountev, Ana Milanova, and Barbara G. Ryder, “Fragment Class Analysis for Testing of Polymorphism in Java Software”, IEEE Transactions on Software Engineering, volume 30, number 6, pages 372-387, June 2004. **Special issue containing the best papers** from the International Conference on Software Engineering (ICSE03). Substantially revised version of the conference paper, with significant new material.

[PASTE04] 96. Atanas Rountev, Scott Kagan, and Michael Gibas, “Evaluating the Imprecision of Static Analysis”, ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering, pages 14-16, June 2004. (36 submitted, 10 accepted, 28% acceptance rate)

[JASE04] 97. Ana Milanova, Atanas Rountev, and Barbara G. Ryder, “Precise Call Graphs for C Programs with Function Pointers”, International Journal on Automated Software Engineering, volume 11, number 1, pages 7-26, January 2004. **Special issue containing the best papers** from the IEEE International Workshop on Source Code Analysis and Manipulation (SCAM02). Extensive revision and expansion of the workshop paper.

[ICSE03] 98. Atanas Rountev, Ana Milanova, and Barbara G. Ryder, "Fragment Class Analysis for Testing of Polymorphism in Java Software", International Conference on Software Engineering, pages 210-220, May 2003. (324 submitted, 42 accepted, 13% acceptance rate)

[ICSM02] 99. Ana Milanova, Atanas Rountev, and Barbara G. Ryder, "Constructing Precise Object Relation Diagrams", IEEE International Conference on Software Maintenance, pages 586-595, October 2002. (127 submitted, 61 accepted, 48% acceptance rate)

[SCAM02] 100. Ana Milanova, Atanas Rountev, and Barbara G. Ryder, "Precise Call Graph Construction in the Presence of Function Pointers", IEEE International Workshop on Source Code Analysis and Manipulation, pages 155-163, October 2002. (23 submitted, 17 accepted, 74% acceptance rate)

[ISSTA02] 101. Ana Milanova, Atanas Rountev, and Barbara G. Ryder, "Parameterized Object Sensitivity for Points-to and Side-Effect Analyses for Java", ACM SIGSOFT International Symposium on Software Testing and Analysis, pages 1-11, July 2002. (97 submitted, 26 accepted, 27% acceptance rate)

[OOPSLA01] 102. Atanas Rountev, Ana Milanova, and Barbara G. Ryder, "Points-to Analysis for Java Using Annotated Constraints", Conference on Object-Oriented Programming, Systems, Languages, and Applications, pages 43-55, October 2001. (145 submitted, 27 accepted, 19% acceptance rate)

[CC01] 103. Atanas Rountev and Barbara G. Ryder, "Points-to and Side-effect Analyses for Programs Built with Precompiled Libraries", International Conference on Compiler Construction, pages 20-36, April 2001. (69 submitted, 22 accepted, 32% acceptance rate)

[PLDI00] 104. Atanas Rountev and Satish Chandra, "Off-line Variable Substitution for Scaling Points-to Analysis", ACM SIGPLAN Conference on Programming Language Design and Implementation, pages 47-56, June 2000. (173 submitted, 30 accepted, 17% acceptance rate)

[FSE99] 105. Atanas Rountev, Barbara G. Ryder, and William Landi, "Data-Flow Analysis of Program Fragments", ACM SIGSOFT Symposium on the Foundations of Software Engineering, pages 235-252, September 1999. (141 submitted, 29 accepted, 21% acceptance rate)

Funding

1. "Collaborative Research: PPoSS: Large: A Comprehensive Framework for Efficient, Scalable, and Performance-Portable Tensor Applications", National Science Foundation CCF-2216903, Lead PI: P. Sadayappan (Utah), Entire project: $5M, Rountev: $450K, July 2022 – June 2027.
2. "Collaborative Research: PPoSS: Planning: Model-Driven Compiler Optimization and Algorithm-Architecture Co-Design for Scalable Machine Learning", National Science Foundation CCF-2118737, Lead PI: P. Sadayappan (Utah), Entire project: $250K, Rountev: $63K, August 2021 – July 2022.
3. "PrivAid: Differentially-Private Analytics for Android Apps", National Science Foundation CCF-1907715, PI: Atanas Rountev, co-PI: Raef Bassily, $499,928, October 2019 – September 2022
4. "Exascale Code Generation Toolkit", Department of Energy, PI: P. Sadayappan, co-PI: Atanas Rountev, $370,900, May 2017 – April 2020
5. "Control-Flow and Data-Flow Analysis of Android Software: Foundations and Applications", National Science Foundation CCF-1526459, PI: Atanas Rountev, $470,208, September 2015 – August 2019
6. "CDS&E: Compiler/Runtime Support for Developing Scalable Parallel Multi-Scale Multi-Physics Engineering Applications", National Science Foundation ACI-1404995, PI: P. Sadayappan, co-PI: Atanas Rountev, $544,347, July 2014 – June 2019
7. "LeakDroid: Exposing Leaks and Jank in Android Applications", National Science Foundation CCF-1319695, PI: Atanas Rountev, $465,133, September 2013 – August 2016
8. "LeakDroid: Exposing and Debugging Leaks in Android Applications", Google Faculty Research Award, PI: Atanas Rountev, $48,286, March 2013 – March 2014

9. "Domain Specific Language Support for Exascale", Office of Science, Department of Energy, DE-SC0008844, PI: P. Sadayappan, co-PI: Atanas Rountev, $880,907, September 2012 – August 2015
10. "Algorithms for Dynamic Analysis of Run-time Bloat", National Science Foundation CCF-1017204, PI: Atanas Rountev, $356,531, September 2010 – August 2013
11. "A Polyhedral Transformation Framework for Compiler Optimization", Office of Science, Department of Energy, DE-SC0005033, PI: P. Sadayappan, co-PI: Atanas Rountev, $399,842, September 2010 – August 2013
12. "Customizable Domain-Specific Computing", National Science Foundation Expeditions in Computing CCF-0926127, PI: P. Sadayappan, co-PI: Atanas Rountev (Rountev joined the project in September 2012), $599,997, September 2009 – August 2014; project led by UCLA
13. "Polyhedral Analyses and Transformations for the Platform-Aware Compilation Environment (PACE)", Defense Advanced Research Projects Agency, Department of Defense, PI: P. Sadayappan, co-PI: Atanas Rountev, $820,000, April 2009 – November 2011; project led by Rice University
14. "BIGFOOT: Searching for the Elusive Small Memory Footprint for Java Applications", IBM Software Quality Innovation Award, PI: Atanas Rountev, $25,000, January 2009 – December 2009
15. "An Effective Automatic Parallelization Framework for Multi-Core Architectures", National Science Foundation CCF-0811781, PI: P. Sadayappan, co-PI: Atanas Rountev, $516,000, September 2008 – August 2012
16. "CAREER: Dataflow Analysis for Modern Software Systems", National Science Foundation CCF-0546040, PI: Atanas Rountev, $407,000, September 2006 – August 2012
17. "An Integrated Framework for Compile-Time/Run-time Support for Multi-scale Applications on High-end Systems", National Science Foundation CNS-0509467, PI: P. Sadayappan, co-PI: Atanas Rountev, $348,000, September 2005 – August 2008
18. "TACLE: Type Analysis and Call Graph Construction for Eclipse", IBM Eclipse Innovation Grant, PI: Atanas Rountev, $27,000, January 2005 – December 2005
19. "Comprehensive Assessment and Planning Model Interim Solution (CAPMIS) Pilot Evaluation Project", Ohio Department of Job and Family Services, PI: Scottye J. Cash (Social Work), co-PIs: Denise Bronson, Celeste Burke, Tom Gregoire (Social Work), Atanas Rountev (Computer Science and Engineering), $1,267,200, October 2005 – June 2007

Professional Activities

- Editorial Board member for
    - ACM Transactions on Software Engineering and Methodology (TOSEM), Associate Editor, March 2014 – June 2019
    - Journal of Object Technology, August 2011 – April 2016
    - Journal of Information and Software Technology, January 2008 – July 2012
- Steering Committee member for ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering (PASTE 2012 and 2013)
- Program Committee (PC) member for
    - ACM SIGPLAN International Conference on Compiler Construction (CC 2023)
    - IEEE/ACM International Conference on Mobile Software Engineering and Systems (MobileSoft 2020)
    - IEEE/ACM International Conference on Mobile Software Engineering and Systems (MobileSoft 2019)
    - 5th ACM SIGPLAN International Workshop on the State Of the Art in Program Analysis (SOAP 2016)
    - IEEE/ACM International Conference on Mobile Software Engineering and Systems (MobileSoft 2016)
    - European Conference on Object-Oriented Programming (ECOOP 2016)
    - 13th International Workshop on Dynamic Analysis (WODA 2015)
    - 2nd International Conference on Mobile Software Engineering and Systems (MobileSoft 2015)

    - 35th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2014)
    - 11th International Workshop on Dynamic Analysis (WODA 2013)
    - 34th International Conference on Software Engineering (ICSE 2012)
    - ACM International Symposium on Software Testing and Analysis (ISSTA 2011)
    - 32nd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2011)
    - **PC co-chair**: 9th ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering (PASTE 2010)
    - International Conference on High-Performance Computing (HiPC 2009)
    - 16th ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE 2008)
    - 8th ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering (PASTE 2008)
    - **PC co-chair:** 6th International Workshop on Dynamic Analysis (WODA 2008)
    - Workshop on Performance Optimization for High-Level Languages and Libraries (POHLL 2008)
    - Demos/Tools Track, 30th International Conference on Software Engineering (ICSE 2008)
    - 29th International Conference on Software Engineering (ICSE 2007)
    - 23rd IEEE International Conference on Software Maintenance (ICSM 2007)
    - 7th IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2007)
    - 4th International Workshop on Software Quality Assurance (SOQUA 2007)
    - Workshop on Performance Optimization for High-Level Languages and Libraries (POHLL 2007)
    - ACM International Symposium on Software Testing and Analysis (ISSTA 2006)
    - 22nd IEEE International Conference on Software Maintenance (ICSM 2006)
    - 4th Eclipse Technology Exchange Workshop at OOPSLA (ETX 2006)
    - 4th International Workshop on Dynamic Analysis (WODA 2006)
    - 6th IEEE International Workshop on Source Code Analysis and Manipulation (SCAM 2006)
    - 21st IEEE International Conference on Software Maintenance (ICSM 2005)
    - 6th International Symposium on Automated and Analysis-Driven Debugging (AADEBUG 2005)
    - 3rd International Workshop on Dynamic Analysis (WODA 2005)
- External Review Committee (ERC) member for
    - 36th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2015)
- Panelist for several NSF panels
- Reviewer for
    - NSF grant proposals
    - ACM SIGPLAN Dissertation Award competition
    - UK Council of Professors and Heads of Computing – dissertation competition
    - National Sciences and Engineering Research Council of Canada (NSERC)
    - Ontario Ministry of Research and Innovation, Canada
    - Hong Kong Research Grants Council (RGC)
    - Two external tenure cases
    - ACM Transactions on Software Engineering and Methodology (TOSEM)
    - IEEE Transactions on Software Engineering (TSE)
    - ACM Transactions on Programming Languages and Systems (TOPLAS)
    - IEEE Transactions on Parallel and Distributed Systems (TPDS)
    - Journal of Software Maintenance and Evolution (JSME)
    - Journal of Software Testing, Verification, and Reliability (STVR)
    - Journal of Information and Software Technology (IST)
    - Journal of Systems and Software (JSS)

    - Software: Practice and Experience (SP&E)
    - Science of Computer Programming (SCP)
    - Journal of Object Technology (JOT)
    - SIAM Journal of Computing
    - Journal of Computer Science and Technology (JCST)
    - International Conference on Software Engineering (ICSE) Mentoring Program
    - ACM SIGSOFT Symposium on the Foundations of Software Engineering (FSE)
    - International Conference on Software Engineering (ICSE)
    - ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA)
    - ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)
    - ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL)
    - ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)
    - ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming (PPoPP)
    - ACM International Conference on Supercomputing (ICS)
    - Supercomputing: International Conference for High Performance Computing, Networking, Storage and Analysis (SC)
    - IEEE International Parallel and Distributed Processing Symposium (IPDPS)
    - International European Conference on Parallel and Distributed Computing (Euro-Par)
    - International Conference on Embedded Systems (EMSOFT)
    - ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering (PASTE)
    - International Workshop on Languages and Compilers for Parallel Computing (LCPC)
    - Workshop on Performance Optimization for High-Level Languages and Libraries (POHLL)
- Member of
    - Association for Computing Machinery (ACM)
    - ACM Special Interest Group on Software Engineering (SIGSOFT)
    - ACM Special Interest Group on Programming Languages (SIGPLAN)

Graduate Advising

- Current students
    - Yu Hao (Ph.D.)
    - Braeden Jenske (Ph.D.)
    - Chris Yao (Ph.D.)
- Former students (chronological list)
    - Sufian Latif, Ph.D. thesis: "*Introducing Differential Privacy Mechanisms for Mobile App Analytics of Dynamic Content*" (December 2021); currently at Google
    - Hailong Zhang, Ph.D. thesis: "*Differentially-Private Remote Software Profiling*" (July 2020); currently at Virginia Tech
    - Haowei Wu, Ph.D. thesis: "*Detection of Energy-Inefficiency Patterns in Android Applications*" (August 2018); currently at Google
    - Yan Wang, Ph.D. thesis: "*Obfuscation-Resilient Code Detection Analyses for Android Apps*" (August 2018); currently at Google
    - Shengqian Yang, Ph.D. thesis: "*Static Analyses of GUI Behavior in Android Applications*" (September 2015); currently at Google
    - Dacong Yan, Ph.D. thesis: *"Program Analyses for Understanding the Behavior and Performance of Traditional and Mobile Object-Oriented Software"* (June 2014); currently at Google
    - Guoqing Xu, Ph.D. thesis: *"Analyzing Large-Scale Object-Oriented Software to Find and Remove Runtime Bloat"* (August 2011); currently a tenured Associated Professor of Computer Science at the University of California, Los Angeles

    - Kevin Van Valkenburgh, M.S. thesis: *"Measuring and Improving the Potential Parallelism of Sequential Java Programs"* (August 2009); currently at Eaton Corporation
    - Jason Sawin, Ph.D. thesis: *"Improving the Static Resolution of Dynamic Java Features"* (July 2009); currently Professor and Department Chair of Computer & Information Sciences at University of St. Thomas
    - Alexandar Pantaleev, Ph.D. thesis: *"Dynamic Analyses for Understanding and Optimization of the Enterprise Java Applications"* (August 2008); currently a tenured Associate Professor of Computer Science at SUNY Oswego
    - Mariana Sharp, Ph.D. thesis: *"Static Analyses for Java in the Presence of Distributed Components and Large Libraries"* (August 2007); currently at Google
    - Scott Kagan, M.S. thesis: *"Static and Dynamic Analyses for Supporting the Reverse Engineering of UML Sequence Diagrams"* (February 2007); currently at Lockheed Martin
    - Beth Harkness Connell, M.S. thesis: *"Object Naming in Reverse Engineering of UML Sequence Diagrams"* (November 2004)
    - Chris Kuck, M.S. thesis*: "Class Analysis for Extensible Java Software"* (September 2004)
    - Olga Volgin, M.S. thesis*: "Analysis of Flow of Control for Reverse Engineering of Sequence Diagrams"* (June 2004); currently at Microsoft
    - Miriam Reddoch, M.S. thesis: "*Intra-Method Test Coverage of Reverse-Engineered Sequence Diagrams"* (March 2004); currently at Siemens
- Co-advised with Prof. P. Sadayappan
    - Mohanish Narayan, M.S. thesis: *"PolyOpt/Fortran: A Polyhedral Optimizer for Fortran Programs"* (June 2012); currently at Amazon
    - Rajkiran Panuganti, Ph.D. thesis: *"A High Productivity Framework for Parallel Data Intensive Computing in MATLAB"* (March 2009); currently at Microsoft

Teaching

- Programming Languages (CSE 6341 and CSE 755): Winter 2004, Winter 2005, Spring 2007, Winter 2008, Spring 2009, Autumn 2010, Winter 2011, Autumn 2011, Autumn 2015, Spring 2016, Autumn 2016, Spring 2017, Autumn 2017, Spring 2019, Autumn 2020, Spring 2022, Autumn 2022
- Compiler Design and Implementation (CSE 5343 and CSE 756): Spring 2009, Spring 2010, Spring 2011, Spring 2012, Spring 2013, Spring 2014, Spring 2015, Autumn 2016, Autumn 2018, Spring 2023
- Principles of Programming Languages (CSE 3341 and CSE 655): Spring 2005, Autumn 2005, Winter 2006, Spring 2006, Autumn 2006, Winter 2007, Autumn 2007, Spring 2008, Autumn 2008, Winter 2009, Autumn 2012
- Software Development in Java (CSE 421): Winter 2009
- Software Engineering (CSE 757): Autumn 2002, Winter 2003, Autumn 2003, Autumn 2004
- Compile-Time Program Analysis and Transformations (CSE 788): Autumn 2010, Autumn 2014
- Dynamic Analysis of Software (CSE 5239): Autumn 2012
- Dynamic Analysis of Imperative and Object-Oriented Software (CSE 788): Spring 2008
- Analysis and Testing of Object-Oriented Software (CSE 788): Winter 2003, Winter 2004, Spring 2006

Departmental and College Service

- Faculty Search Committee, Autumn 2008 to Spring 2023 (committee chair 2016-2023)
- College of Engineering Promotion and Tenure Committee, Autumn 2015 and Autumn 2016
- CSE Chair Search Committee (committee chair), Autumn 2017 and Autumn 2018
- Curriculum Committee, Autumn 2006 to Spring 2008, Autumn 2010 to Spring 2016
- Executive Committee, Autumn 2016 to Spring 2023

- Advisory Committee, Autumn 2011 to Summer 2012, Autumn 2015 to Summer 2016
- Graduate Studies Committee, Autumn 2002 to Spring 2005, Autumn 2007 to Spring 2009, Autumn 2020 to Spring 2022
- Graduate Admissions Committee, Autumn 2005 to Spring 2006
- Qualifying/Comprehensive Examination Committee, Autumn 2004, Spring 2005, Autumn 2007, Spring 2008, Spring 2010, Spring 2011, Autumn 2011, Autumn 2012, Spring 2016, Spring 2017, Spring 2019, Autumn 2020, Spring 2022, Spring 2023

Awards and Recognition

- Department of Computer Science and Engineering Service Award 2022
- Distinguished papers at ICSE'08, SCAM'07, ICSM'05, ICSE'03, SCAM'02
- Lumley Research Award, College of Engineering, The Ohio State University, May 2009
- Nominated by the Department of Computer Science at Rutgers University for the ACM Doctoral Dissertation Award, September 2002
- Excellence Fellowship for Doctoral Studies, 1995, Graduate School, Rutgers University
- Outstanding Academic Achievements Award (highest honors for graduating students), 1995, Technical University, Sofia, Bulgaria
- National Academic Excellence Award, 1993 and 1994, Eureka Foundation, Sofia, Bulgaria