Stanford



Alex Aiken

Alcatel-Lucent Professor of Communications and Networking, Professor of Particle Physics and Astrophysics, and of Photon Science

Computer Science

Bio

BIO

Alex Aiken is the Alcatel-Lucent Professor of Computer Science at Stanford. Alex received his Bachelors degree in Computer Science and Music from Bowling Green State University in 1983 and his Ph.D. from Cornell University in 1988. Alex was a Research Staff Member at the IBM Almaden Research Center (1988-1993) and a Professor in the EECS department at UC Berkeley (1993-2003) before joining the Stanford faculty in 2003. His research interest is in areas related to programming languages.

ACADEMIC APPOINTMENTS

- Professor, Computer Science
- Professor, Particle Physics and Astrophysics
- Professor, Photon Science Directorate
- Member, Bio-X

HONORS AND AWARDS

- Programming Languages Achievement Award, ACM SIGPLAN
- ACM Fellow, ACM
- Phi Beta Kappa Teaching Award, Phi Beta Kappa

PROFESSIONAL EDUCATION

- PhD, Cornell (1988)

LINKS

- http://theory.stanford.edu/~aiken: http://theory.stanford.edu/~aiken
- Google Scholar: https://scholar.google.com/citations?hl=en&user=3vKjkoQAAAAJ

Teaching

COURSES

2026-27

- Parallel Computing Research Project: CS 315B (Win)
- Programming Languages: CS 242 (Aut)

2025-26

- Mathematical Foundations of Computing: CS 103 (Spr)
- Programming Languages: CS 242 (Aut)

2024-25

- Mathematical Foundations of Computing: CS 103 (Spr)
- Programming Languages: CS 242 (Aut)

2023-24

- Mathematical Foundations of Computing: CS 103 (Spr)
- Programming Languages: CS 242 (Aut)

Publications

PUBLICATIONS

- **Fully-Automatic Type Inference for Borrows with Lifetimes** *PROCEEDINGS OF THE ACM ON PROGRAMMING LANGUAGES-PACMPL*
  Brandon, W., Driscoll, B., Dai, F., Ragan-Kelley, J., Milano, M., Aiken, A.
  2026; 10 (OOPSLA1)
- **Optimal Software Pipelining andWarp Specialization for Tensor Core GPUs**
  Soi, R., Yadav, R., Kjolstad, F., Aiken, A., Dehnavi, M., Garland, M., Bauer, M., USENIX ASSOC
  USENIX ASSOC.2026: 1875-1890
- **Task-Based Tensor Computations on Modern GPUs** *PROCEEDINGS OF THE ACM ON PROGRAMMING LANGUAGES-PACMPL*
  Yadav, R., Garland, M., Aiken, A., Bauer, M.
  2025; 9 (PLDI)
- **LogCloud: Fast Search of Compressed Logs on Object Storage** *PROCEEDINGS OF THE VLDB ENDOWMENT*
  Wang, Z., Wei, J., Aiken, A., Zhang, G., Torring, J. O., Jiang, R., Iang, C. J., Xu, W.
  2025; 18 (8): 2362-2370
- **Composing Distributed Computations Through Task and Kernel Fusion**
  Yadav, R., Sundram, S., Lee, W., Garland, M., Bauer, M., Aiken, A., Kjolstad, F., ACM
  ASSOC COMPUTING MACHINERY.2025: 182-197
- **Improving Parallel Program Performance with LLM Optimizers via Agent-System Interfaces**
  Wei, A., Nie, A., Teixeira, T. X., Yadav, R., Lee, W., Wang, K., Aiken, A.
  edited by Singh, A., Fazel, M., Hsu, D., Lacoste-Julien, S., Berkenkamp, F., Maharaj, T., Wagstaff, K., Zhu, J.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2025: 66155-66177
- **KDRSolvers: Scalable, Flexible, Task-Oriented Krylov Solvers**
  Zhang, D., Yadav, R., Aiken, A., Kjolstad, F., Treichler, S., ACM
  ASSOC COMPUTING MACHINERY.2025: 1351-1365
- **High-Performance Branch-Free Algorithms for Extended-Precision Floating-Point Arithmetic**
  Zhang, D., Aiken, A., ACM
  ASSOC COMPUTING MACHINERY.2025: 695-710
- **Automatic Verification of Floating-Point Accumulation Networks**
  Zhane, D. K., Aiken, A.
  edited by Rakamaric, Z., Piskac, R.
  SPRINGER INTERNATIONAL PUBLISHING AG.2025: 215-237
- **Flexible Windowing for Correlation-Aware Ranking in Anomalous Environments**
  Das, A., Hoffmann, H., Aiken, A.
  edited by Ding, W., Vreeken, J., Lu, C. T., Gunopulos, D., Wu
  IEEE COMPUTER SOC.2025: 1135-1144

- **HiCCL: A Hierarchical Collective Communication Library**
  Hidayetoglu, M., de Gonzalo, S., Slaughter, E., Surana, P., Hwu, W., Gropp, W., Aiken, A., IEEE COMPUTER SOC
  IEEE COMPUTER SOC.2025: 950-961
- **Automatic Tracing in Task-Based Runtime Systems**
  Yadav, R., Bauer, M., Broman, D., Garland, M., Aiken, A., Kjolstad, F., ACM
  ASSOC COMPUTING MACHINERY.2025: 84-99
- **Quanto: optimizing quantum circuits with automatic generation of circuit identities** *QUANTUM SCIENCE AND TECHNOLOGY*
  Pointing, J., Padon, O., Jia, Z., Ma, H., Hirth, A., Palsberg, J., Aiken, A.
  2024; 9 (4)
- **Recursive Program Synthesis using Paramorphisms**
  Hong, Q., Aiken, A.
  ASSOC COMPUTING MACHINERY.2024
- **CommBench: Micro-Benchmarking Hierarchical Networks with Multi-GPU, Multi-NIC Nodes**
  Hidayetoglu, M., de Gonzalo, S., Slaughter, E., Li, Y., Zimmer, C., Bicer, T., Ren, B., Gropp, W., Hwu, W., Aiken, A., Assoc Computing Machinery
  ASSOC COMPUTING MACHINERY.2024: 426-436
- **Speaking Pygion: Experiences Writing an Exascale Single Particle Imaging Code**
  Mirchandaney, S., Aiken, A., Slaughter, E.
  edited by Diehl, P., Schuchart, J., Valero-Lara, P., Bosilca, G.
  SPRINGER INTERNATIONAL PUBLISHING AG.2024: 1-8
- **Prolego: Time-Series Analysis for Predicting Failures in Complex Systems**
  Das, A., Aiken, A., IEEE
  IEEE COMPUTER SOC.2023: 77-86
- **Putting People in Their Place: Affordance-Aware Human Insertion into Scenes**
  Kulal, S., Brooks, T., Aiken, A., Wu, J., Yang, J., Lu, J., Efros, A. A., Singh, K., IEEE
  IEEE COMPUTER SOC.2023: 17089-17099
- **Multinode Multi-GPU Two-Electron Integrals: Code Generation Using the Regent Language.** *Journal of chemical theory and computation*
  Johnson, K. G., Mirchandaney, S., Hoag, E., Heirich, A., Aiken, A., Martinez, T. J.
  2022
- **Inferring Invariants with Quantifier Alternations: Taming the Search Space Explosion**
  Koenig, J. R., Padon, O., Shoham, S., Aiken, A.
  edited by Fisman, D., Rosu, G.
  SPRINGER INTERNATIONAL PUBLISHING AG.2022: 338-356
- **Unity: Accelerating DNN Training Through Joint Optimization of Algebraic Transformations and Parallelization**
  Unger, C., Jia, Z., Wu, W., Lin, S., Baines, M., Narvaez, C., Ramakrishnaiah, V., Prajapati, N., McCormick, P., Mohd-Yusof, J., Luo, X., Mudigere, D., Park, et al
  USENIX ASSOC.2022: 267-284
- **SpDISTAL: Compiling Distributed Sparse Tensor Computations**
  Yadav, R., Aiken, A., Kjolstad, F., IEEE
  IEEE.2022
- **Task Fusion in Distributed Runtimes**
  Sundram, S., Lee, W., Aiken, A., IEEE
  IEEE COMPUTER SOC.2022: 13-25
- **Quartz: Superoptimization of Quantum Circuits**
  Xu, M., Li, Z., Padon, O., Lin, S., Pointing, J., Hirth, A., Ma, H., Palsberg, J., Aiken, A., Acar, U. A., Jia, Z.
  edited by Jhala, R., Dillig
  ASSOC COMPUTING MACHINERY.2022: 625-640

- **DISTAL: The Distributed Tensor Algebra Compiler**
  Yadav, R., Aiken, A., Kjolstad, F.
  edited by Jhala, R., Dillig
  ASSOC COMPUTING MACHINERY.2022: 286-300

- **Induction Duality: Primal-Dual Search for Invariants** *PROCEEDINGS OF THE ACM ON PROGRAMMING LANGUAGES-PACMPL*
  Padon, O., Wilcox, J. R., Koenig, J. R., McMillan, K. L., Aiken, A.
  2022; 6

- **Programmatic Concept Learning for Human Motion Description and Synthesis**
  Kulal, S., Mao, J., Aiken, A., Wu, J., IEEE COMP SOC
  IEEE COMPUTER SOC.2022: 13833-13842

- **Performance Variability and Causality in Complex Systems**
  Das, A., Ratner, D., Aikenl, A.
  edited by Casadei, R., DiNitto, E., Gerostathopoulos, Pianini, D., Dusparic, Wood, T., Nelson, P., Pournaras, E., Bencomo, N., Gotz, S., Krupitzer, C., Raibulet, C.
  IEEE COMPUTER SOC.2022: 19-24

- **FLEET-Fast Lanes for Expedited Execution at 10 Terabits: Program Overview** *IEEE INTERNET COMPUTING*
  Douglis, F., Robertson, S., Berg, E., Micallef, J., Pucci, M., Aiken, A., Bergman, K., Hattink, M., Seok, M.
  2021; 25 (3): 79-87

- **Hierarchical Motion Understanding via Motion Programs**
  Kulal, S., Mao, J., Aiken, A., Wu, J., IEEE COMP SOC
  IEEE COMPUTER SOC.2021: 6564-6572

- **Adaptive Restarts for Stochastic Synthesisy**
  Koenig, J. R., Padon, O., Aiken, A.
  edited by Freund, S. N., Yahav, E.
  ASSOC COMPUTING MACHINERY.2021: 696-709

- **First-Order Quantified Separators**
  Koenig, J. R., Padon, O., Immerman, N., Aiken, A.
  edited by Donaldson, A. F., Torlak, E.
  ASSOC COMPUTING MACHINERY.2020: 703–17

- **Task Bench: A Parameterized Benchmark for Evaluating Parallel Runtime Performance**
  Slaughter, E., Wu, W., Fu, Y., Brandenburg, L., Garcia, N., Kautz, W., Marx, E., Morris, K. S., Cao, Q., Bosilca, G., Mirchandaney, S., Lee, W., Treichleril, et al
  IEEE.2020

- **SPoC: Search-based Pseudocode to Code**
  Kulal, S., Pasupat, P., Chandra, K., Lee, M., Padon, O., Aiken, A., Liang, P.
  edited by Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.
  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019

- **Pygion: Flexible, Scalable Task-Based Parallelism with Python**
  Slaughter, E., Aiken, A., IEEE Comp Soc
  IEEE COMPUTER SOC.2019: 58-72

- **TASO: Optimizing Deep Learning Computation with Automatic Generation of Graph Substitutions**
  Jia, Z., Padon, O., Thomas, J., Warszawski, T., Zaharia, M., Aiken, A., ACM
  ASSOC COMPUTING MACHINERY.2019: 47–62

- **A Constraint-Based Approach to Automatic Data Partitioning for Distributed Memory Execution**
  Lee, W., Papadakis, M., Slaughter, E., Aiken, A., Assoc Comp Machinery
  ASSOC COMPUTING MACHINERY.2019

- **Semantic Program Alignment for Equivalence Checking**
  Churchill, B., Padon, O., Sharma, R., Aiken, A.
  edited by McKinley, K. S., Fisher, K.
  ASSOC COMPUTING MACHINERY.2019: 1027–40

- **Active Learning of Points-To Specifications**
  Bastani, O., Sharma, R., Aiken, A., Liang, P.
  ASSOC COMPUTING MACHINERY.2018: 678–92

- **Dynamic Tracing: Memoization of Task Graphs for Dynamic Task-Based Runtimes**
  Lee, W., Slaughter, E., Bauer, M., Treichler, S., Warszawski, T., Garland, M., Aiken, A., IEEE Press
  ASSOC COMPUTING MACHINERY.2018

- **Exploring Hidden Dimensions in Parallelizing Convolutional Neural Networks**
  Jia, Z., Lin, S., Qi, C. R., Aiken, A.
  edited by Dy, J., Krause, A.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2018

- **Isometry: A Path-Based Distributed Data Transfer System**
  Jia, Z., Treichler, S., Shipman, G., McCormick, P., Aiken, A., ACM
  ASSOC COMPUTING MACHINERY.2018: 295-306

- **On Automatically Proving the Correctness of math . h Implementations** *PROCEEDINGS OF THE ACM ON PROGRAMMING LANGUAGES-PACMPL*
  Lee, W., Sharma, R., Aiken, A.
  2018; 2

- **Correctness of Dynamic Dependence Analysis for Implicitly Parallel Tasking Systems**
  Lee, W., Stelle, G., McCormick, P., Aiken, A., IEEE
  IEEE.2018: 17–24

- **A Distributed Multi-GPU System for Fast Graph Processing** *PROCEEDINGS OF THE VLDB ENDOWMENT*
  Jia, Z., Kwon, Y., Shipman, G., McCormick, P., Erez, M., Aiken, A.
  2017; 11 (3): 297–310

- **Seam: Provably Safe Local Edits on Graphs** *PROCEEDINGS OF THE ACM ON PROGRAMMING LANGUAGES-PACMPL*
  Papadakis, M., Bernstein, G., Sharma, R., Aiken, A., Hanrahan, P.
  2017; 1

- **Synthesizing Program Input Grammars**
  Bastani, O., Sharma, R., Aiken, A., Liang, P.
  ASSOC COMPUTING MACHINERY.2017: 95–110

- **Sound Loop Superoptimization for Google Native Client**
  Churchill, B., Sharma, R., Bastien, J. F., Aiken, A.
  ASSOC COMPUTING MACHINERY.2017: 313–26

- **Sound Loop Superoptimization for Google Native Client** *ACM SIGPLAN NOTICES*
  Churchill, B., Sharma, R., Bastien, J. F., Aiken, A.
  2017; 52 (4): 313-326

- **Integrating External Resources with a Task-Based Programming Model**
  Jia, Z., Treichler, S., Shipman, G., Bauer, M., Watkins, N., Maltzahn, C., McCormick, P., Aiken, A., IEEE
  IEEE.2017: 307–16

- **Sound Loop Superoptimization for Google Native Client**
  Churchill, B., Sharma, R., Bastien, J. F., Aiken, A., ACM
  ASSOC COMPUTING MACHINERY.2017: 313-326

- **Control Replication: Compiling Implicit Parallelism to Efficient SPMD with Logical Regions**

Slaughter, E., Lee, W., Treichler, S., Zhang, W., Bauer, M., Shipman, G., McCormick, P., Aiken, A., Assoc Comp Machinery
ASSOC COMPUTING MACHINERY.2017

- **Dependent Partitioning** *ACM SIGPLAN NOTICES*
  Treichler, S., Bauer, M., Sharma, R., Slaughter, E., Aiken, A.
  2016; 51 (10): 344-358
- **Verifying Bit-Manipulations of Floating-Point** *ACM SIGPLAN NOTICES*
  Lee, W., Sharma, R., Aiken, A.
  2016; 51 (6): 70-84
- **Stratified Synthesis: Automatically Learning the x86-64 Instruction Set** *ACM SIGPLAN NOTICES*
  Heule, S., Schkufza, E., Sharma, R., Aiken, A.
  2016; 51 (6): 237-250
- **From invariant checking to invariant inference using randomized search** *FORMAL METHODS IN SYSTEM DESIGN*
  Sharma, R., Aiken, A.
  2016; 48 (3): 235-256
- **Stochastic Program Optimization** *COMMUNICATIONS OF THE ACM*
  Schkufza, E., Sharma, R., Aiken, A.
  2016; 59 (2): 114-122
- **Towards Asynchronous Many-Task In Situ Data Analysis Using Legion**
  Pebay, P., Bennett, J. C., Hollman, D., Treichler, S., McCormick, P. S., Sweeney, C. M., Kolla, H., Aiken, A., IEEE
  IEEE.2016: 1033-1037
- **Minimizing GUI Event Traces**
  Clapp, L., Bastani, O., Anand, S., Aiken, A.
  edited by Zimmermann, T., ClelandHuang, J., Su, Z.
  ASSOC COMPUTING MACHINERY.2016: 422–34
- **Interactively Verifying Absence of Explicit Information Flows in Android Apps** *ACM SIGPLAN NOTICES*
  Bastani, O., Anand, S., Aiken, A.
  2015; 50 (10): 299-315
- **Conditionally Correct Superoptimization** *ACM SIGPLAN NOTICES*
  Sharma, R., Schkufza, E., Churchill, B., Aiken, A.
  2015; 50 (10): 147-162
- **Verification of Producer-Consumer Synchronization in GPU Programs** *ACM SIGPLAN NOTICES*
  Sharma, R., Bauer, M., Aiken, A.
  2015; 50 (6): 88-98
- **Composing Concurrency Control** *ACM SIGPLAN NOTICES*
  Ziv, O., Aiken, A., Golan-Gueta, G., Ramalingam, G., Sagiv, M.
  2015; 50 (6): 240-249
- **Specification Inference Using Context-Free Language Reachability** *ACM SIGPLAN NOTICES*
  Bastani, O., Anand, S., Aiken, A.
  2015; 50 (1): 553-566
- **Regent: A High-Productivity Programming Language for HPC with Logical Regions**
  Slaughter, E., Lee, W., Treichler, S., Bauer, M., Aiken, A., ACM
  ASSOC COMPUTING MACHINERY.2015
- **M-3: High-Performance Memory Management from Off-the-Shelf Components** *ACM SIGPLAN NOTICES*
  Terei, D., Aiken, A., Vitek, J.
  2014; 49 (11): 3-13

- **Singe: Leveraging Warp Specialization for High Performance on GPUs** *ACM SIGPLAN NOTICES*
  Bauer, M., Treichler, S., Aiken, A.
  2014; 49 (8): 119-130
- **First-class Runtime Generation of High-performance Types using Exotypes** *35th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*
  DeVito, Z., Ritchie, D., Fisher, M., Aiken, A., Hanrahan, P.
  ASSOC COMPUTING MACHINERY.2014: 77–88
- **Stochastic Optimization of Floating-Point Programs with Tunable Precision** *35th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*
  Schkufza, E., Sharma, R., Aiken, A.
  ASSOC COMPUTING MACHINERY.2014: 53–64
- **Bias-Variance Tradeoffs in Program Analysis** *41st Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL)*
  Sharma, R., Nori, A. V., Aiken, A.
  ASSOC COMPUTING MACHINERY.2014: 127–37
- **From Invariant Checking to Invariant Inference Using Randomized Search**
  Sharma, R., Aiken, A.
  edited by Biere, A., Bloem, R.
  SPRINGER INTERNATIONAL PUBLISHING AG.2014: 88-105
- **Apposcopy: Semantics-Based Detection of Android Malware through Static Analysis**
  Feng, Y., Anand, S., Dillig, I., Aiken, A., Cheung, S., Orso, A., Storey, M.
  ASSOC COMPUTING MACHINERY.2014: 576–87
- **Structure Slicing: Extending Logical Regions with Fields**
  Bauer, M., Treichler, S., Slaughter, E., Aiken, A., IEEE
  IEEE.2014: 845-856
- **Realm: An Event-Based Low-Level Runtime for Distributed Memory Architectures**
  Treichler, S., Bauer, M., Aiken, A., IEEE
  IEEE.2014: 263-275
- **Data-Driven Equivalence Checking** *ACM SIGPLAN NOTICES*
  Sharma, R., Schkufza, E., Churchill, B., Aiken, A.
  2013; 48 (10): 391-406
- **Language Support for Dynamic, Hierarchical Data Partitioning** *ACM SIGPLAN NOTICES*
  Treichler, S., Bauer, M., Aiken, A.
  2013; 48 (10): 495-514
- **Terra: A Multi-Stage Language for High-Performance Computing** *34th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*
  DeVito, Z., Hegarty, J., Aiken, A., Hanrahan, P., Vitek, J.
  ASSOC COMPUTING MACHINERY.2013: 105–15
- **Stochastic Superoptimization** *ACM SIGPLAN NOTICES*
  Schkufza, E., Sharma, R., Aiken, A.
  2013; 48 (4): 305-315
- **Data-Driven Equivalence Checking.**
  Sharma, R., Schkufza, E., Churchill, B., Aiken, A.
  2013
- **Verification as Learning Geometric Concepts** *20th International Static Analysis Symposium (SAS)*
  Sharma, R., Gupta, S., Hariharan, B., Aiken, A., Nori, A. V.
  SPRINGER-VERLAG BERLIN.2013: 388–411

- **A Data Driven Approach for Algebraic Loop Invariants** *22nd European Symposium on Programming (ESOP)*
  Sharma, R., Gupta, S., Hariharan, B., Aiken, A., Liang, P., Nori, A. V.
  SPRINGER-VERLAG BERLIN.2013: 574–592
- **Crowd-scale Interactive Formal Reasoning and Analytics.**
  Fast, E., Lee, C., Aiken, A., Bernstein, M., Koller, D., Smith, E.
  2013
- **A Data Driven Approach for Algebraic Loop Invariants**
  Sharma, R., Gupta, S., Hariharan, B., Aiken, A., Liang, P., Nori, A., V.
  2013
- **Verification as Learning Geometric Concepts.**
  Sharma, R., Gupta, S., Hariharan, B., Aiken, A., Nori, A.
  2013
- **Language Support for Dynamic, Hierarchical Data Partitioning.**
  Treichler, S., Bauer, M., Aiken, A.
  2013
- **An Introduction to Data Representation Synthesis** *COMMUNICATIONS OF THE ACM*
  Hawkins, P., Rinard, M., Aiken, A., Sagiv, M., Fisher, K.
  2012; 55 (12): 91-99
- **Understanding the Behavior of Database Operations under Program Control** *ACM SIGPLAN NOTICES*
  Tamayo, J. M., Aiken, A., Bronson, N., Sagiv, M.
  2012; 47 (10): 983-995
- **Automated Error Diagnosis Using Abductive Inference** *ACM SIGPLAN NOTICES*
  Dillig, I., Dillig, T., Aiken, A.
  2012; 47 (6): 181-191
- **Concurrent Data Representation Synthesis** *ACM SIGPLAN NOTICES*
  Hawkins, P., Aiken, A., Fisher, K., Rinard, M., Sagiv, M.
  2012; 47 (6): 417-427
- **Legion: Expressing Locality and Independence with Logical Regions** *International Conference for High Performance Computing, Networking, Storage and Analysis (SC)*
  Bauer, M., Treichler, S., Slaughter, E., Aiken, A.
  IEEE.2012
- **Minimum Satisfying Assignments for SMT.**
  Dillig, I., Dillig, T., McMillan, K., Aiken, A.
  2012
- **Interpolants as Classifiers.**
  Sharma, R., Nori, A., Aiken, A.
  2012
- **An Introduction to Data Representation Synthesis.** *Communications of the ACM*
  Hawkins, P., Aiken, A., Fisher, K., Rinard, M., Sagiv, M.
  2012; 12 (55): 91-99
- **Automated Error Diagnosis Using Abductive Inference**
  Dillig, I., Dillig, T.
  2012
- **Reasoning about Lock Placements** *21st European Symposium on Programming (ESOP) held as Part of the 15th European Joint Conferences on Theory and Practice of Software (ETAPS)*
  Hawkins, P., Aiken, A., Fisher, K., Rinard, M., Sagiv, M.

SPRINGER-VERLAG BERLIN.2012: 336–356

- **Cuts from proofs: a complete and practical technique for solving linear inequalities over integers** *FORMAL METHODS IN SYSTEM DESIGN*
  Dillig, I., Dillig, T., Aiken, A.
  2011; 39 (3): 246-260
- **Automatic Fine-Grain Locking using Shape Properties** *ACM SIGPLAN NOTICES*
  Golan-Gueta, G., Bronson, N., Aiken, A., Ramalingam, G., Sagiv, M., Yahav, E.
  2011; 46 (10): 225-241
- **Testing Atomicity of Composed Concurrent Operations** *ACM SIGPLAN NOTICES*
  Shacham, O., Bronson, N., Aiken, A., Sagiv, M., Vechev, M., Yahav, E.
  2011; 46 (10): 51-64
- **Programming the Memory Hierarchy Revisited: Supporting Irregular Parallelism in Sequoia** *ACM SIGPLAN NOTICES*
  Bauer, M., Clark, J., Schkufza, E., Aiken, A.
  2011; 46 (8): 13-23
- **Data Representation Synthesis** *ACM SIGPLAN NOTICES*
  Hawkins, P., Aiken, A., Fisher, K., Rinard, M., Sagiv, M.
  2011; 46 (6): 38-49
- **Precise and Compact Modular Procedure Summaries for Heap Manipulating Programs** *ACM SIGPLAN NOTICES*
  Dillig, I., Dillig, T., Aiken, A., Sagiv, M.
  2011; 46 (6): 567-577
- **Precise Reasoning for Programs Using Containers** *ACM SIGPLAN NOTICES*
  Dillig, I., Dillig, T., Aiken, A.
  2011; 46 (1): 187-200
- **Data Representation Synthesis**
  Hawkins, P., Aiken, A., Fisher, K., Rinard, M., Sagiv, M., ACM SIGPLAN
  ASSOC COMPUTING MACHINERY.2011: 38–49
- **Precise Reasoning for Programs Using Containers**
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- **Precise and Compact Modular Procedure Summaries for Heap Manipulating Programs**
  Dillig, I., Dillig, T., Aiken, A., Sagiv, M., ACM SIGPLAN
  ASSOC COMPUTING MACHINERY.2011: 567-577
- **Simplifying Loop Invariant Generation Using Splitter Predicates.**
  Sharma, R., Dillig, I., Dillig, T.
  2011
- **Liszt: A Domain Specific Language for Building Portable Mesh-based PDE Solvers.**
  DeVito, Z., Joubert, N., Palacios, F., Oakley, S., Medina, M., Barrientos, M., Aiken, A.
  2011
- **Inferring Data Polymorphism in Systems Code.**
  Hackett, B., Aiken, A.
  2011
- **Advice for Program Chairs.** *ACM Sigplan Notices*
  Aiken, A.
  2011; 4 (46): 19-25
- **Online Detection of Multi-Component Interactions in Production Systems** *IEEE/IFIP 41st International Conference on Dependable Systems and Networks (DSN)*
  Oliner, A. J., Aiken, A.

IEEE.2011: 49–60

- **Symbolic Heap Abstraction with Demand-Driven Axiomatization of Memory Invariants** *Conference on Object Oriented Programming Systems, Languages and Applications/SPLASH 2010*
  Dillig, I., Dillig, T., Aiken, A.
  ASSOC COMPUTING MACHINERY.2010: 397–410
- **Reasoning About the Unknown in Static Analysis** *COMMUNICATIONS OF THE ACM*
  Dillig, I., Dillig, T., Aiken, A.
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