

Adarsh Yoga

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PhD Candidate at Rutgers University

Research Interest

My research interest is in the area of Programming Languages and Tools. I am interested in building tools, using program analysis techniques, that aid programming and debugging of parallel programs.

Education

- 9/2013–current **Ph.D.**, *Computer Science*, Rutgers University, Piscataway, NJ.
8/2009–5/2011 **MS**, *Computer Science*, Indiana University, Bloomington, IN.
9/2003–5/2007 **BE**, *Computer Science*, M.S Ramaiah Institute of Technology, Bangalore, India.

Work Experience

- 7/2015–current **Research Assistant**, *Rutgers University*, Piscataway NJ.
5/2017–8/2017 **Research Associate**, *HP Labs*, Palo Alto CA.
6/2014–8/2014 **Graduate Intern**, *Intel Corporation*, Hudson MA.
9/2013–6/2015 **Teaching Assistant**, *Rutgers University*, Piscataway NJ.
6/2011–8/2013 **Software Developer**, *Starmount*, Austin TX.
 - Part of the R&D group involved in the development of Starmount's mobile point of sale product

5/2010–5/2011 **Research Assistant**, *Indiana University*, Bloomington IN.
 - Implemented an algorithm to compute electric and magnetic fields in a space-charged cylindrical beam and parallelized it using MPI

7/2007–7/2009 **Software Development Engineer**, *General Motors*, Bangalore India.
 - Part of the Auto Code Generation team. Developed an integrated tool chain to automate the entire build process of the Hybrid Vehicle Development Program using Perl and VB

Publications

- [1] Adarsh Yoga and Santosh Nagarakatte. Parallelism-centric what-if and differential analyses. In *Proceedings of the 40th ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)*, 2019.
- [2] Nader Boushehrinejadmoradi, Adarsh Yoga, and Santosh Nagarakatte. A parallelism profiler with what-if analyses for openmp programs. In *Proceedings of the International Conference for High Performance Computing, Networking, Storage, and Analysis (SC)*, 2018.
- [3] Adarsh Yoga and Milind Chabbi. Path-synchronous performance monitoring in hpc interconnection networks with source-code attribution. In *Proceedings of International Workshop on Performance Modeling, Benchmarking and Simulation of High Performance Computer Systems (PBMS)*, 2017.

- [4] Adarsh Yoga and Santosh Nagarakatte. A fast causal profiler for task parallel programs. In *Proceedings of 2017 11th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE)*, 2017.
- [5] Adarsh Yoga and Santosh Nagarakatte. Atomicity violation checker for task parallel programs. In *Proceedings of the 2016 International Symposium on Code Generation and Optimization (CGO)*, 2016.
- [6] Adarsh Yoga, Santosh Nagarakatte, and Aarti Gupta. Parallel data race detection for task parallel programs with locks. In *Proceedings of the 2016 24th ACM SIGSOFT International Symposium on Foundations of Software Engineering (FSE)*, 2016.
- [7] Chun-Yu Shei, Adarsh Yoga, Madhav Ramesh, and Arun Chauhan. Matlab parallelization through scalarization. In *Proceedings of the 2011 15th Workshop on Interaction Between Compilers and Computer Architectures (INTERACT)*, 2011.

Patents

- *Path-Synchronous Performance Monitoring of Interconnection Networks Based on Source Code Attribution*. Milind M. Chabbi, Michael Schlansker and Adarsh Yoga. US Patent : 90484404. Filing Date: September 15, 2017. Under consideration.

Poster Presentations

- [1] Adarsh Yoga. Parallel Data Race Detection for Task Parallel Programs with Locks. 2016 PLDI Student Research Competition.
- [2] Adarsh Yoga and Santosh Nagarakatte. Atomicity Violation Checker for Task Parallel Programs. CGO 2016.
- [3] Adarsh Yoga. Precise Detection of Atomicity Violations in Structured Parallel Programs. 2015 PLDI Student Research Competition.
- [4] Xiaoming Gao, Pranav Shah, Adarsh Yoga, Abhijeet Kodgire, and Xiaogang Ni. A Survey of Cloud Storage Systems. CloudCom 2010.

Honors and Awards

- *Bronze medal* at the Student Research Competition at PLDI 2015
- *Best Emerging Research Poster Award* at the IEEE 2010 International Conference on Cloud Computing Technology and Science
- NSF Travel awards to attend PLDI 2015, CGO 2016 and PLDI 2016

Talks

- A Fast Causal Profiler for Task Parallel Programs
 - At FSE 2017, *Paderborn, Germany*
 - At NJPLS 2017, *Princeton, NJ*
- Path-Synchronous Performance Monitoring in HPC Interconnection Networks with Source-Code Attribution at PBMS 2017, *Denver, CO*
- Parallel Data Race Detection for Task Parallel Programs with Locks at FSE 2016, *Seattle, WA*

- Atomicity Violation Checker for Task Parallel Programs
 - At CGO 2016, *Barcelona, Spain*
 - At NJPLS 2016, *Philadelphia, PA*

Teaching

Fall '13 Data Structures
Spring '14, '15 Principles of Programming Languages
Fall '14 Principles of Information and Data Management
Fall '18 Computer Architecture

Professional Service

PLDI 2016 Artifact Evaluation Committee member
CGO-PPoPP 2017,2019 Artifact Evaluation Committee member

References

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