

## Research Interests

My research interests lie broadly in the areas of Software Engineering, Programming Languages and Verification.

## Education

**PhD Candidate, Computer Science and Engineering, *University of Washington*, Seattle.**

CGPA: 4/4, Advisor: Prof. Michael Ernst

**M.Sc(Engg), Computer Science, *Indian Institute of Science*, Bangalore.**

Received 2015, CGPA: 6.3/8, Advisor: Dr. Murali Krishna Ramanathan

Thesis: Efficient Instrumentation for Object Flow Profiling

## Conference Publications

- Rashmi Mudduluru, Pantazis Deligiannis, Ankush Desai, Akash Lal, Shaz Qadeer **Lasso detection using partial-state caching**, Formal Methods in Computer-Aided Design (FMCAD), 2017.
- Rashmi Mudduluru, Murali Krishna Ramanathan, **Efficient Flow Profiling for Detecting Performance Bugs**, 25th International Symposium on Software Testing and Analysis (ISSTA), 2016.  
[Received the **ACM SIGSOFT Distinguished paper award**].
- Pantazis Deligiannis, Matt McCutchen, Paul Thomson, Shuo Chen, Alastair F. Donaldson, John Erickson, Cheng Huang, Akash Lal, Rashmi Mudduluru, Shaz Qadeer, Wolfram Schulte, **Uncovering Bugs in Distributed Storage Systems during Testing (Not in Production!)**, 14th USENIX Conference on File and Storage Technologies (FAST), 2016.
- Monika Dhok, Rashmi Mudduluru, Murali Krishna Ramanathan, **Pegasus: Automatic Barrier Inference for Stable Multithreaded Systems**, International Symposium on Software Testing and Analysis (ISSTA), 2015.
- Rashmi Mudduluru, Murali Krishna Ramanathan, **Efficient Incremental Static Analysis Using Path Abstraction**, 17th International Conference on Fundamental Approaches to Software Engineering (FASE), 2014.

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## Selected Projects

- Created a runtime analysis that identifies liveness bugs in distributed systems. The analysis detected repeating states in an execution trace that violated a liveness property. Several features of the tool were designed with the aim of keeping the runtime overheads at a minimum. It was able to identify real bugs in production code like Microsoft Azure storage vNext System.
- Implemented a dynamic data race detector for programs written in P#, a DSL for developing and testing asynchronous systems using the happens before algorithm. Dynamic instrumentation was done with the help of Extended Reflection, a library that facilitates inserting callbacks for MSIL instructions.
- Designed and built a profiler that tracks the precise data path taken by objects in Java programs. Implementation was done in Java on top of the Calfuzzer/Soot framework.
- Built an incremental static analyzer on top of SATURN, a constraint based static analysis tool for finding bugs. Implementation was done in OCaml and Berkeley DB.
- Implemented a static null pointer dereference analysis tool for JAVA programs using the Soot bytecode analysis framework.

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## Graduate Courses

Concepts of Programming Languages, Software Engineering, Data Visualization, Program analysis and verification, Design and analysis of algorithms, Automata theory and computability, Topics in software bug detection, Automated verification.

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## Professional Experience

**Research Fellow**, *Microsoft Research, India*, Bangalore, 2015–2017.  
Mentor: Dr. Akash Lal

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## Service

- Teaching Assistant for the under graduate course *Data Structures and Algorithms* at the University of Washington.
- Teaching Assistant for the under graduate course *Software Engineering* at the University of Washington.
- Teaching Assistant for the graduate course *Automata Theory and Computability* at the Indian Institute of Science.
- Student volunteer at *International Conference on Software Engineering (ICSE) 2014*.