
Hayawardh Vijayakumar

Senior Software Engineer ◇ Samsung Research America

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EDUCATION

Doctor of Philosophy, Computer Science and Engineering
The Pennsylvania State University, University Park, PA, USA
Advisor: Dr. Trent Jaeger

May 2014

Bachelor of Engineering, Computer Science and Engineering
Sri Venkateswara College of Engineering, Anna University, Chennai, India

May 2007

WORK EXPERIENCE

Senior Software Engineer *Samsung Research America*, Mountain View, CA.

2014 - Current

- Broadly responsible for developing tools for automated testing of Samsung mobile phones, mentoring intern projects, and providing creative input for new features.

PhD Candidate *Penn State University*, University Park, PA.

2008 - 2014

- My PhD dissertation looked at programs' interaction with the system they are deployed in, and how mismatches between program expectations of a system and the reality in the system can cause problems. I also worked on infrastructures for providing transparent verification of the cloud, ARM TrustZone-based kernel runtime monitoring, and analyzing policies at multiple layers for mediation and consistency properties.

Intern *NEC Labs America*, Princeton, NJ.

Summer 2013

- Worked in the autonomous systems group. Worked on transforming log data into graphical representations.

Technical Intern *Qualcomm Innovation Inc. (QuicInc)*, Raleigh, NC.

Summer 2010

- Worked as part of team optimizing Linux kernel for Google Chrome netbooks on Qualcomm hardware. I developed software to probe and test graphic stack capabilities in a black-box way, using which several driver bugs were discovered.

Technical Intern *Hexaware Technologies*, India.

Summer 2005

- Developed a teaching aid for the Turing Machine in Java.

PROJECTS

Pennsylvania State University, University Park, PA.

2008 - Present

- **ARM TrustZone-Based Operating System Monitoring**: Use ARM TrustZone to monitor runtime integrity of Linux operating system.
- **System-Based Testing**: Simulate a tester in the operating system and test if programs have name resolution bugs.
- **Cloud Customer Requirements Assurance**: A framework to provide a channel to cloud customers that guarantees connection to only those cloud instances and infrastructure that satisfy the customers criteria.
- **Multi-Layered System Consistency**: Techniques to verify complete mediation and consistency of system policies at multiple layers.

SVCE, India.

2004 - 2007

- **Networks and Distributed Systems**: Proposed a modification of shortest path algorithm for distributed systems. Proposed an algorithmic enhancement to a packet classification algorithm for faster update times.

AWARDS AND SCHOLARSHIPS

- Certificate of Appreciation, Samsung Research America - 2014, 2015.
- Outstanding Teaching Assistant Award, Computer Science and Engineering Department, Penn State University
- Medal for being placed 6th in the Asia region of The 31st Annual ACM International Collegiate Programming Contest (ACM ICPC 2006).
- Awarded scholarship in first semester of undergraduate study for outstanding performance.