

Rohith R

Research Intern at MPI-SWS

Max Planck Institute For Software Systems,
Kaiserslautern, Germany.

Email: rohithr31@gmail.com

Homepage: rohithr31.github.io

Research Interest

I am broadly interested in working in the intersection of Operating Systems, Computer Architecture, and High Performance Computing to solve real world problems.

Education

Aug '13 – Dec '16 B.E. (Hons.) Computer Science, BITS Pilani, K.K. Birla Goa Campus.

Work

Mar '17 – *present* Research Internship at MPI-SWS, Germany.
Aug '16 – Jan '17 Research Internship at NTU, Singapore. *As a part of undergraduate thesis*
May '16 – July '16 Internship at Intuit, India. *Worked on Android-N, Multi-Window drag and drop in TurboTax in collaboration with Google Mt. View.*
May '15 – July '15 Internship at TNEGA, India. *Worked on optimizing real time bus tracking and travel.*

Research Projects

Mar '17 – Present **Research Internship**, at MPI-SWS, Germany
Under the supervision of Dr. Björn B. Brandenburg. Working on analyzing the temporal behavior of the linux Completely Fair Scheduler (CFS) for both general purpose and Real-Time systems with certain timing constraints.
Aug '16 – Jan '17 **Undergraduate thesis**, at NTU, Singapore
Under the supervision of Dr. Siew Kei Lam and Dr. Vivek Chaturvedi. Worked on simulation of many-core architecture architectures for lifetime reliability and scheduling optimization. Built a robust and multi-purpose tool (LifeSim) to analyze and optimize lifetime reliability of a many-core system under periodic and non-periodic workloads.
Oct '15 – May '16 **Research Collaboration**, with Siemens Research, India
Under the supervision of Dr. Santonu Sarkar and Dr. Sayantan Mitra. Worked on optimizing GPU algorithms by using shared memory as a software controlled cache. Built STL like abstractions for the optimized code for the widely popular C++ library *Thrust*.

Selected Open-Source Projects

BITS-OS	A hobby kernel developed during 2nd year. Keyboard, display, clock drivers along with mini-shell.
MIT-JOS	Contributed to MIT-JOS to add features like Memory Management using Paging and Segmentation and Process Management.
VLIW Architecture	A working implementation of VLIW architecture based on MIPS architecture and ARM thumb ISA.
ECHO (Chatbot)	A chatbot that talks to you to solve your problems. Based on ML and AI algorithms like LDA, LSI, doc-2-vec, RNN.
cfat	A simple tool to help you save time during a codeforces contest.

Publications

- LifeSim: A Lifetime Reliability Simulator for Manycore Systems (Under Review)
- A Hierarchical Approach for Enhancing Lifetime Reliability of Manycore Systems (Under Review)

Technical skills

Programming	C, C++, Java (Android), Python, Cuda, Verilog, PHP, SQL
Languages spoken	English, Hindi, Malayalam, Tamil

Activities, Teaching & Mentoring

- Teaching Assistant
 - Data structures and algorithms, BITS Pilani, Goa Campus. Spring 2016.
 - Discrete structures for computer science, BITS Pilani, Goa Campus. Fall 2016.
- Mentor
 - Operating Systems From Scratch (OSFS). Technology Incubator Program.
 - Introduction to competitive coding. Technology Incubator Program.
- Vice President, ACM Chapter, BITS Pilani, Goa Campus
- Developer, Mobile App Club, BITS Pilani, Goa Campus

Achievements

- **1st Prize** : All Intuit 24 hrs Hackathon. 2016. Intuit, India.
- **1st Prize** : ASCII Hackathon. 2014. BITS Pilani, Goa Campus.
- **2nd Prize** : Quark Codejam. 2016. BITS Pilani, Goa Campus.