ALEN K SABU

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EDUCATION

National University of Singapore, Singapore.

- Doctor of Philosophy (*Ph.D.*) in Computer Science *Jan 2019 – Dec 2023* (Expected)
  - Advisor: Dr. Trevor E. Carlson
  - Areas: Processor architecture, program analysis, performance modeling and measurements, simulation infrastructure, workload characterization, operating system design

Birla Institute of Technology & Science – Pilani, Rajasthan, India.

- Master of Engineering (*M.E.*) in Computer Science *Aug 2014 – May 2016*
  - Thesis: Performance improvement of multicore scheduler in real-time mixed criticality systems
  - Adviser: Dr. Biju K. Raveendran
  - Selected coursework: Advanced Computer Architecture, Advanced Algorithms and Complexity, Advanced Operating Systems, Cloud Computing, Data Mining, Real-time Systems.

University of Kerala, Thiruvananthapuram, Kerala, India.

- Bachelor of Technology (*B.Tech.*) in Computer Science and Engineering *Aug 2009 – Dec 2013*
  - FYP: Online handwritten character recognition using Kohonen neural networks

PUBLICATIONS

CONFERENCES & JOURNALS

[1] Alen Sabu, Harish Patil, Wim Heirman, and Trevor E. Carlson, "LoopPoint: Checkpoint-driven Sampled Simulation for Multi-threaded Applications," to appear in *The 28th IEEE International Symposium on High-Performance Computer Architecture (HPCA), Seoul, South Korea, Feb 2022*

[2] Harish Patil, Alexander Isaev, Wim Heirman, Alen Sabu, Ali Hajiabadi, and Trevor E. Carlson, "ELFies: Executable Region Checkpoints for Performance Analysis and Simulation," in *International Symposium on Code Generation and Optimization (CGO), Mar 2021*

[3] Alen Sabu, Biju Raveendran, and Rituparna Ghosh, "SMILEY: A Mixed-Criticality Real-Time Task Scheduler for Multicore Systems," in *The 22nd International Symposium on Distributed Simulation and Real Time Applications*, Madrid, Spain, *Oct 2018* (*Nominated best paper*)

WORKSHOPS & POSTERS

[1] Alen Sabu, Harish Patil, Wim Heirman, Alexander Isaev, and Trevor E. Carlson, "Approaching a High-Performance, General-Purpose Multi-Threaded Sampling Methodology," in *The Second Young Architect Workshop (YArch)*, Lausanne, Switzerland, *Mar 2020*

TUTORIALS & TALKS

[1] "LoopPoint and ELFies: Tools and Techniques to Accelerate Architecture Simulations of Complex Multi-threaded Applications using Checkpointing," at *The International Symposium on Computer Architecture (ISCA)*, New York City, New York, USA, *Jun 2022*

WORK EXPERIENCE

NetApp, Bengaluru, India

- Member Technical Staff II *Jul 2016 – Nov 2018*
  - Designed and developed features for a tool that predicts the performance metrics of storage systems
  - The predictions are implemented as mathematical models of storage systems for different workload constraints, storage constraints, and user provided constraints for *Clustered Data ONTAP*
  - The models are based on empirical data and therefore we determine the performance numbers of hardware devices through lab measurements and analysis for different kinds of workloads/protocols

SKILLS

C, C++, Python, Bash, LaTeX, Git, GDB, Intel Pin, Sniper x86 simulator

AWARDS

- NUS Graduate Research Scholarship, National University of Singapore *Jan 2019 – Till date*
- BITS Higher Degree Scholarship, Birla Institute of Technology & Science, Pilani *Aug 2014 – May 2016*