

## EDUCATION

### National University of Singapore, Singapore

- Doctor of Philosophy (*Ph.D.*) in Computer Science *Jan 2019 – Jul 2024 (Expected)*
  - Thesis: Accelerating the Evaluation of Large Workloads on Modern Systems using Sampling
  - Advisor: Dr. Trevor E. Carlson
  - Areas: Processor architecture, workload characterization, dynamic program analysis, performance modeling and measurements, simulation infrastructure

### 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
  - Advisor: 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*
  - Thesis: Online Object Recognition from Images 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,” in *The 28<sup>th</sup> IEEE International Symposium on High-Performance Computer Architecture (HPCA)*, Apr 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 *The 19<sup>th</sup> 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 22<sup>nd</sup> International Symposium on Distributed Simulation and Real Time Applications (DS-RT)*, 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 2<sup>nd</sup> Young Architect Workshop (YArch)*, Mar 2020

### TUTORIALS & TALKS

- [1] “LoopPoint Tools: Sampled Simulation of Complex Multi-threaded Workloads using Sniper and gem5”
  - The 29<sup>th</sup> International Symposium on High-Performance Computer Architecture (HPCA) *Feb 2023*
- [2] “Studies in Selection and Validation of Regions of Interest in Heterogeneous CPU-GPU Workloads”
  - VSSAD Seminar, Intel Corporation, MA, USA *Dec 2022*
- [3] “LoopPoint and ELFies: Tools and Techniques to Accelerate Architecture Simulations of Complex Multi-threaded Applications using Checkpointing”
  - The 49<sup>th</sup> International Symposium on Computer Architecture (ISCA) *Jun 2022*
  - International Symposium on Performance Analysis of Systems & Software (ISPASS), *May 2022*
- [4] “LoopPoint: Checkpoint-Driven Sampled Simulation for Multi-threaded Applications”
  - VSSAD Seminar, Intel Corporation, MA, USA *Mar 2022*

## INDUSTRY EXPERIENCE

### Intel Corporation, Massachusetts, USA

- Research Intern *Jul 2022 – Dec 2022*
  - Host: Dr. Harish Patil
  - Performance analysis, sampling, and simulation of heterogeneous CPU-GPU workloads

### National University of Singapore, Singapore

- Research Intern *Nov 2018 – Jan 2019*
  - Host: Dr. Trevor E. Carlson

### NetApp, Bengaluru, India

- Member Technical Staff II *Jul 2016 – Nov 2018*
  - Performance modeling of data storage devices, empirical analysis of storage protocols and workloads

<b>SKILLS</b>	C, C++, Python, Bash, L <sup>A</sup> T <sub>E</sub> X, Git, Docker, GDB, Intel Pin, Intel GTPin, Sniper x86 simulator		
<b>AWARDS</b>	<ul style="list-style-type: none"> <li>▪ Research Achievement Award 2021/2022 from the School of Computing, National University of Singapore</li> <li>▪ Travel grant for the 49<sup>th</sup> International Symposium on Computer Architecture (ISCA'22), USA</li> <li>▪ Travel grant for the 2<sup>nd</sup> Young Architect Workshop at ASPLOS'20, Switzerland</li> <li>▪ NUS Graduate Research Scholarship, National University of Singapore <i>Jan 2019 – Till date</i></li> <li>▪ BITS Higher Degree Scholarship, Birla Institute of Technology &amp; Science, Pilani <i>Aug 2014 – May 2016</i></li> </ul>		
<b>PROFESSIONAL SERVICE</b>	<ul style="list-style-type: none"> <li>▪ Served in the artifact evaluation committee of IEEE/ACM International Symposium on Code Generation and Optimization (CGO), 2023</li> <li>▪ Served as a reviewing member for Master of Computing admissions in the School of Computing, National University of Singapore, 2021</li> </ul>		
<b>TEACHING EXPERIENCE</b>	<ul style="list-style-type: none"> <li>▪ Teaching Assistant for CS2030 Programming Methodology II at NUS <i>Spring 2021</i></li> <li>▪ Teaching Assistant for CS2106 Introduction to Operating Systems at NUS <i>Fall 2020</i></li> <li>▪ Teaching Assistant for CS1010E Programming Methodology at NUS <i>Spring 2020</i></li> <li>▪ Teaching Assistant for CSF342 Computer Architecture at BITS Pilani <i>Fall 2015</i></li> </ul>		
<b>REFERENCES</b>	<ul style="list-style-type: none"> <li>▪ <b>Dr. Trevor E. Carlson</b> Assistant Professor School of Computing National University of Singapore, Singapore ✉ tcarlson@nus.edu.sg</li> <li>▪ <b>Dr. Harish Patil</b> Principal Engineer Technology Path-finding and Innovation Group Intel Corporation, USA ✉ harish.patil@intel.com</li> </ul>		