

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 Post-Dennard 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] Changxi Liu*, Alen Sabu*, Akanksha Chaudhari, Qingxuan Kang, and Trevor E. Carlson, “Pac-Sim: Simulation of Multi-threaded Workloads using Intelligent, Live Sampling,” in *ArXiv*, Oct 2023
* Joint first authors
- [2] Alen Sabu, Harish Patil, Wim Heirman, and Trevor E. Carlson, “LoopPoint: Checkpoint-driven Sampled Simulation for Multi-threaded Applications,” in *The 28th IEEE International Symposium on High-Performance Computer Architecture (HPCA)*, Apr 2022
- [3] 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 19th International Symposium on Code Generation and Optimization (CGO)*, Mar 2021
- [4] 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 (DS-RT)*, Oct 2018 (*Nominated best paper*)

WORKSHOPS & POSTERS

- [1] Alen Sabu, Harish Patil, Wim Heirman, and Trevor E. Carlson, “ROIperf: A Framework to Rapidly Validate Workload Sampling Methodologies,” in *The 1st Workshop on Computer Architecture Modeling and Simulation (CAMS)*, Oct 2023
- [2] Alen Sabu, Harish Patil, Wim Heirman, Alexander Isaev, and Trevor E. Carlson, “Approaching a High-Performance, General-Purpose Multi-Threaded Sampling Methodology,” in *The 2nd Young Architect Workshop (YArch)*, Mar 2020

TUTORIALS & TALKS

- [1] “LoopPoint Tools: Sampled Simulation of Complex Multi-threaded Workloads using Sniper and gem5”
 - The 29th 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 49th 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*

SKILLSC, C++, Python, Bash, \LaTeX , Git, Docker, GDB, Intel Pin, Intel GTPin, NVIDIA NVBit, Sniper x86 simulator

EXPERIENCE	Intel Corporation , Massachusetts, USA	
	<ul style="list-style-type: none"> Research Intern Host: Dr. Harish Patil Performance analysis, sampling, and simulation of heterogeneous CPU-GPU workloads 	<i>Jul 2022 – Dec 2022</i>
	National University of Singapore , Singapore	
	<ul style="list-style-type: none"> Research Intern Host: Dr. Trevor E. Carlson 	<i>Nov 2018 – Jan 2019</i>
	NetApp , Bengaluru, India	
	<ul style="list-style-type: none"> Member Technical Staff II Performance modeling of data storage devices, empirical analysis of storage protocols and workloads 	<i>Jul 2016 – Nov 2018</i>
AWARDS	<ul style="list-style-type: none"> Travel grant for the 56th International Symposium on Microarchitecture (MICRO'23), Canada Research Achievement Award 2021/2022 from the School of Computing, National University of Singapore Travel grant for the 49th International Symposium on Computer Architecture (ISCA'22), USA Travel grant for the 2nd Young Architect Workshop at ASPLOS'20, Switzerland NUS Graduate Research Scholarship, National University of Singapore BITS Higher Degree Scholarship, Birla Institute of Technology & Science, Pilani 	<i>Jan 2019 – Till date</i> <i>Aug 2014 – May 2016</i>
PROFESSIONAL SERVICE	<ul style="list-style-type: none"> Served in the Artifact Evaluation Committee of IEEE/ACM International Symposium on Microarchitecture (MICRO), 2023 Served in the Program Committee of posters/mini-papers at IEEE International Symposium on Workload Characterization (IISWC), 2023 Served in the Artifact Evaluation Committee of IEEE/ACM International Symposium on Code Generation and Optimization (CGO), 2023 Served as a reviewing member for Master of Computing admissions in the School of Computing, National University of Singapore, 2021 	
TEACHING EXPERIENCE	<ul style="list-style-type: none"> Teaching Assistant for CS2030 Programming Methodology II at NUS Teaching Assistant for CS2106 Introduction to Operating Systems at NUS Teaching Assistant for CS1010E Programming Methodology at NUS Teaching Assistant for CSF111 Computer Programming at BITS-Pilani Teaching Assistant for CSF342 Computer Architecture at BITS Pilani 	<i>Spring 2021</i> <i>Fall 2020</i> <i>Spring 2020</i> <i>Spring 2016, Spring 2015</i> <i>Fall 2015</i>
REFERENCES	<ul style="list-style-type: none"> Dr. Trevor E. Carlson Assistant Professor School of Computing National University of Singapore, Singapore ✉ tcarlson@nus.edu.sg 	<ul style="list-style-type: none"> Dr. Harish Patil Principal Engineer Technology Path-finding and Innovation Group Intel Corporation, USA ✉ harish.patil@intel.com