Sreeharsha Udayashankar

Graduate Research Assistant at the University of Waterloo

LinkedIn: https://www.linkedin.com/in/sreeharshau/

s2udayas@uwaterloo.ca
sreeharsha6196@gmail.com

Education

Doctorate – Computer Science
University of Waterloo
2021 – Present

MMath (Thesis) - Computer Science
University of Waterloo
2019 – 2021
GPA: 94.5%

Bachelor of Engineering - Computer Science
PES University, Bangalore, India
2013 – 2017
GPA: 9.12 / 10

About Me

I am a graduate student at the Waterloo Advanced Systems Laboratory working under the supervision of Dr Samer Al-Kiswany for my doctoral degree in Computer Science. My primary research interests lie in Distributed Systems, Cloud Computing and Operating Systems.

I have earned my master's degree at the University of Waterloo in May 2021. In the past couple of years prior to enrolling in this program, I was a member of the CPU Performance and Workloads team at Advanced Micro Devices (AMD). I have also worked as a student researcher on various projects during my undergraduate studies.

Publications and Awards

- **Partial Network Partitioning**
  Accepted for publication at ACM TOCS 2022
- **Orcbench: A Representative Serverless Benchmark**
  IEEE Cloud 2022
- **Benchmarking Differentially Private Algorithms**
  TPDP at ICML 2021
- **Falcon: Low Latency, Network-Accelerated Scheduling**
  EuroP4 at ACM CoNext 2020
- **Gaming Modeling and Projections – The Impact of CPU Performance**
  AMD Asia Tech Conference, 2019
- **Spotlight Award**
  Awarded for exemplary performance at AMD, 2017
- **Distinguished Performance Award**
  Awarded for the rapid implementation of two key projects at Philips, 2015

Professional Experience

Design Engineer II
Advanced Micro Devices (AMD), January 2017 – July 2019

I held various positions at AMD ranging from Co-op Engineer up to Design Engineer II. I was a part of the CPU Performance and Workloads team and engaged in driving CPU architectural design using workload performance as an indicator.

- Performance Profiling and Workload Analysis / Characterization
- Performance Modeling – ***Published*** *at the AMD Asia Tech Conference 2019*
- CPU Performance Simulations and Instruction Tracing

Summer Intern
Philips, June 2016 – July 2016

I worked on projects involving Machine Learning as well as designed a KPI Dashboard for Engineering Team Performance using WCF Services.

- **Awarded** for exemplary performance

Summer Intern
Robert Bosch Centre at the Indian Institute of Science (IISc), June 2015 – July 2015

I was involved in a project involving the decentralization of solar energy to reduce transmission costs and improve power supply to rural areas in India. I designed the web-based UI for this project which was used for the monitoring and diagnostics of solar power grids.

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Skills

- **Programming:** Python, C, C++ and Java
- **Scripting:** Linux and Windows Shell
- **Parallel Programming:** PThreads and OpenMP
- **Performance Analysis:** Xperf, GPUView, Perf and AMD CodeXL
- **Data Analysis:** Numpy, Pandas and scikit-learn
- **Web Design:** Bootstrap, D3 and JS
- **Debugging:** Valgrind and GDB

Volunteer Experience

Regional Head

Igniting Young Minds (NGO), 2014 - 2017

Igniting Young Minds is an initiative to help underprivileged children by imparting soft-skill training and raising their awareness about the opportunities available to them.

Research Experience

Graduate Research Assistant

University of Waterloo, May 2021 - Present

I am working with Dr Samer Al-Kiswany in the area of distributed systems, networking and serverless computing.

- Accelerating large scale data systems' performance using in-network processing and RDMA
- Analysis of bottlenecks in serverless computing infrastructure.
- Analysis of network partitions on large-scale system performance.

Graduate Research Assistant

University of Waterloo, September 2019 – May 2021

I worked under the supervision of Dr Samer Al-Kiswany in the area of distributed systems and networking during my master's program.

- Accelerating large scale data systems' performance using in-network processing

Undergraduate Research Assistant

PES University, August 2015 – December 2016

I was a part of the Cloud Computing and Big Data (CCBD) Lab working under the supervision of Dr K.V. Subramaniam.

- Cinder for OpenSim – Designed the Cinder module in an open-source simulator for OpenStack
- Video Indexing of Football matches and sentiment analysis of football commentary
- Classification of objects in surveillance footage using OpenCV and Python