

Sakib Chowdhury

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TECHNICAL SKILLS

Programming/Development: C++, Python, Java, C; SQL; Verilog, VHDL; JavaScript, HTML, CSS
Developer Tools: CMake, Maven; JUnit; Git, GDB, perf, Valgrind, Bash scripting
Systems: Unix-like (Linux, macOS), AWS (EC2), Embedded (Arduino, 68HC11)
Design Software: MATLAB/Simulink, Fusion 360, EAGLE, LTspice, Quartus Prime; LaTeX, Adobe Creative Cloud (Photoshop, Illustrator, InDesign), Microsoft Office (Word, PowerPoint, Excel)
Languages: English (Native), Bengali (Fluent), French (Basic), Japanese (Beginner)

WORK EXPERIENCE

University of Waterloo, Waterloo, ON

Graduate Research Assistant, Cheriton School of Computer Science 2021 – Present

- Implementing Byzantine-fault-tolerant state machine replication protocol in Go to test and compare performance of distributed consensus algorithms

Graduate Research Student, Distributed Algorithms and Systems Lab 2018 – 2021

- Developed and tested multithreaded recoverable index data structure algorithm in Intel Optane persistent memory using C++ on Linux, and verified correctness using analyzer written in Java
- Outperformed state of the art in write-heavy workloads at high levels of multithreading
- Published in 3-page brief announcement at SPAA 2021
- Collaborated on 17-page paper on correctness testing analyzer of recoverable data structure primitives in Java, published in conference proceedings of OPODIS 2019
- Collaboratively presented talk on persistent memory usage and correctness testing at PODC 2019

Teaching Assistant for Database Systems, Distributed Computing, Prog. for Perf. 2019 – 2020

- Designed, implemented automated student project evaluation systems using fuzzy matching to evaluate runtime performance, static code analysis to verify correctness and satisfaction of project specifications using Java, Bash scripting, Python
- Communicated complex computer science topics in weekly presentations and one-on-one to students

University of Windsor, Windsor, ON

Capstone Design Project, ECE 2018

- Programmed embedded systems to filter muscle signals, detect gestures using sNMF algorithm from EMG amplifier using C++, Python, MATLAB and transmit desired gesture over Wi-Fi network from sensors to 3D-printed, servo-controlled model prosthetic arm
- Designed, prototyped, constructed custom 8-channel EMG signal amplifier module with cost of \$50; 75% cheaper than available consumer technology, using MATLAB, EAGLE, Fusion 360
- Collaboratively developed myoelectrically-controlled prosthetic arm system using low-cost components

Pep Corp. 3D Printing Startup, Windsor, ON

Hardware Developer 2017 – 2018

- Programmed 3D printing automation system, interfacing 3D printer controllers and robotics systems

Enactus Windsor, Windsor, ON (*Volunteering*)

Marketing and Technology Team Member 2017 – 2018

- Created posters, logos, business cards as graphic designer for Enactus, local businesses and start-ups

EDUCATION

University of Waterloo, Waterloo, ON

Master of Applied Science, Electrical and Computer Engineering 2018 – 2021

- Specialization: Software Engineering
- Thesis: Scalable Recoverable Skip Lists in Persistent Memory on NUMA Machines
- Supervisor: Prof. Wojciech Golab
- Cumulative GPA: 89.2

University of Windsor, Windsor, ON

Bachelor of Applied Science, Honours Electrical Engineering 2014 – 2018

- Minor in Mathematics
- Graduated with Distinction.
- Cumulative GPA: 87.0

INTERESTS

Digital painting, drawing, cycling, language learning, reading, tabletop games, improvisational comedy