ALAIN LOU

COMPUTER ENGINEERING, UNIVERSITY OF WATERLOO

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Skills

LANGUAGES: Bash, C, C#, C++, Verilog, VHDL, Perl, Python, RISC-V, Rust, Java, JavaScript, SQL, SYCL

FRAMEWORKS: Angular, Cocotb, Flask, .NET, Numpy, oneAPI, OSGi, React, Spring

TOOLS: AWS, Azure, CMake, Figma, Git, KiCad, Linux, Nginx, Quartus, Perforce, Soldering

Awards

2nd Overall & Best Use of Microsoft Azure
Hack the 6ix
Aug. 2019

Best Use of StdLib
EngHack
Jun. 2019

Top 10 Overall
Hack Lassonde
Mar. 2019

1st in Canada
HourRank 31
(Programming Contest)
Dec. 2018

Activities

Mentor
Sep. 2020 to Current
- Tech+ UW
- ECE Society
- Engineering Ambassador

Experience

Intel — Remote
FPGA Sofware Engineering Intern, High Level Design — Jan. 2021 to Current
- OpenCL/SYCL runtime for FPGAs

Microsoft — Remote
Explore Intern, ODSP — May 2020 to Aug. 2020
- PM and Software Engineer in entire feature development lifecycle of new datetime formatting and boolean rendering features in Microsoft Lists
- Collaborated cross-team to create design (Figma) and PM specs for both features, iterating through user feedback, design critques, spec reviews
- Used React, Fluent UI and the Javascript Date API to implement the new web components
- Wrote library functions to deal with localization, internationalization and timezone conversions

University of Waterloo — Waterloo, Canada
Research Assistant (part-time), Intelligent Connectivity Lab — Jan. 2020 to Apr. 2020
- Developed platform for distributed RFID readers, using Raspberry Pi running Windows 10 IoT and .NET framework
- Used Octane SDK for Impinj RAIN RFID reader and Azure services to build batch data pipeline
- Azure Blob Storage, Device Provisioning Service for device management
- Webapp GUI using d3.js frontend and Azure VM running nginx, gunicorn, flask, cronjobs for batch processing

Nokia — Ottawa, Canada
Software Engineer Intern, SPS Platform — Sep. 2019 to Dec. 2019
- Contributed to transitioning products from LTE to 5G using Java, Gradle, and Bash; built on the OSGi standard (Apache Felix)
- Designed and implemented outbound Diameter message processing framework
- Introduced HTTP stack shutdown procedure when marking a site out-of-service (a new package with Bash install scripts)
- Wrote rule action to reauthorize all other connected sessions under a user (programmatically configurable by the customer)

Projects

Pong — Feb. 2021 to Current
- Pure hardware implementation of Pong on an FPGA board

FFT — Dec. 2019 to Apr. 2020
- Simple 8-point fast Fourier transform module (Cooley-Tukey algorithm) using Verilog
- Numerically verified against Rust implementation, used Quartus waveform simulation

Open Mind — Oct. 2019 to Dec. 2019
- Chrome and Firefox extension encouraging users to become more politically open
- Created Google News recommendation drop-down and user reading score features
- Written in Javascript, using Chrome and Firefox browser APIs

Commutr — Aug. 2019
- Transit community app built on a unique online-offline network infrastructure
- On-board servers connect to internet at stations and act as local network in between stations
- C++ lightweight microcontroller web server, iOS app, Python Flask server for Azure integration

upFoot — Jun. 2019
- Foot traffic IoT sensor for helping people efficiently navigate their day
- Supports real-time queries (through Slack) and records history on Airtable
- ESP8266 microcontroller communicating with a Standard Library web service

Education

University of Waterloo — Sep. 2018 to Current
Candidate for BASc Computer Engineering
- Dean's Honours List x2
- President's Research Award