Junhyeok (Michael) Hong

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Employment History

SerDes Application Design Intern, Xilinx
May 2021 – Present

San Jose, California (Remote)

- Responsible for firmware API & rule engine development (C/C++), scripting (Python) and hardware testing
- Developed a host interface program in C/C++ for an ARM processor to communicate with a soft processor within the FPGA. Increased emphasis on firmware code size optimization and code reusability
- FPGA subsystem rule engine development in C/C++ and corresponding testing / automation scripts generated in Python decreasing total expected development time by 200+ hours

Translator Soldier for the commander of 36th DIV, Republic of Korea Army
October 2018 – April 2020

- The lead translator for the 36th Division during 2019 ROK-US Combined Exercises
- Automated administrative excel tasks such as personnel management and supply management using VBA

Education

B.A.Sc. Candidate, Computer Engineering
September 2016 – Present

University of Toronto *Expected Graduation: April 2023*

- Relevant Coursework: Algorithms & Data Structures, Operating Systems, Computer Networks, Computer Security, Computer Organization, Design & Communication, Programming Fundamentals and Relational Databases

Applied Data Science with Python, Coursera 'Specialization'
July 2020 – October 2020

University of Michigan

- Five-course specialization covering topics: data manipulation, DataViz, machine learning, text mining and network analysis

Projects

Computer Networks Project – Conferencing Session
November 2020 – December 2020

- Developed a terminal text conferencing application in C following TCP/IP protocols
- Designed a multi-threaded algorithm for the server to handle clients' requests by polling and server database manipulation
- Implemented additional functionality including: timeout, auto-join & multi-sessions

Share Hearts (Co-founder)
June 2020 – June 2021

- University of Toronto Covid-19 Student Engagement Award
- Developed a website where people can express themselves through the arts during a global pandemic using WordPress, JavaScript, HTML and CSS

Design & Communication Final Project – MAPS-X
January 2018 – April 2018

- Developed a Geographic Information System (GIS) in C++ using EasyGL and the OpenStreetMap API
- Birds-eye-view graphical display, complete with buildings, streets, parks, point of interest, etc.
- Designed a multi-threaded algorithm for the Travelling Salesman Problem to generate an optimal path for a given set of points; used techniques such as simulated annealing to refine heuristic

Digital Systems Final Project - Photonic Harp
November 2017 – December 2017

- Designed and built an electronic wooden harp-like instrument with 8 laser diodes wired to the DE1-SoC FPGA board
- Programmed using Verilog to produce sound through laser obstruction
- Implemented instrumental controlling functionality including: harmonization, key-change, semi-tone, sustain & fade-out

Skills

- Programming Languages: **C**, **C++**, **Python**, **Swift**, SQL, JavaScript, HTML, CSS, Verilog, x86 Assembly, VBA
- Technologies/Frameworks: Git, GitHub, SVN, WordPress, Cocoa Touch, Firebase, Realm, React, React Native, Django