Sean Wu

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Work Experience

Intel | FPGA IP Software Engineering Intern
May 2021—Present

- Developed an MxN AXI4 interconnect FPGA IP for increasing concurrent read throughput
- Designed a protocol agnostic performance monitor FPGA IP
- Optimized RTL designs by reducing area consumption and improving timing for faster execution

U of T Intelligent Sensory Microsystems Lab | Research Intern
May 2020—Aug 2020

- Developed new 3D computational imaging software to accurately detect and visualize nearby objects
- Applied classical computer vision and numerical computing techniques using Python, NumPy, and OpenCV

National University of Singapore | Student Researcher
May 2019—Aug 2019

- Developed mathematical simulations for environmentally friendly air conditioners to greatly reduce energy expenditure in tropical climates

Extracurriculars

aUToronto self-driving car team | Planning Team Developer
Aug 2021—Present

- Member of onsite team that won 1st place overall in the 2022 SAE Autodrive Challenge II Year 1 competition sponsored by General Motors
- Managed the traffic light association pipeline, behaviour planner, and HD semantic map C++ interface during competition
- Developed a traffic light association pipeline using multi-threaded C++ and ROS 2 to (a) associate 2D traffic light camera detections with upcoming traffic lights in the map; and (b) filter final traffic light state

Personal Projects

FluidStride Computer Vision Running Gait Analysis
Oct 2020—Apr 2021 | www.myfluidstride.com

- Creator and solo developer of computer vision software to analyze running form in 2D/3D
- Implemented various human pose estimation and running biomechanics papers in a working Python prototype to accurately study running gait

Awards

Hack The 6ix Best use of Google Cloud Prize	2020
U of T Engineering Science Research Opportunity Fellowship	2019, 2020
3rd, UofT Engineering Competition Programming Challenge	2020
U of T Engineering Dean's Honours List	2018—2021
U of T Donald C. Leigh Memorial Scholarship	2018

Education

BASc | Engineering Science
University of Toronto | 2018—Present

- 4th year student (ECE Option)
- cGPA: 3.73

Skills

Software Development
Languages
Python • C++ • Bash

Libraries and Frameworks
NumPy • Matplotlib • OpenCV • Tensorflow 2.0 • ROS 2 • GoogleTest

Mobile and Web Development
Android • Jekyll • HTML • CSS

Development Tools
Git • Vim • Tmux

Hardware
FPGA Design
SystemVerilog • Quartus • VCS

Embedded Systems
Arduino • Raspberry Pi

General
Languages
English • Chinese • French

Soft Skills
Adaptability • Time Management • Collaboration • Problem-solving

Interests

Triathlon
Foreign languages
Travelling