Shawn (Yi Xiao) Lu

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Technical Skills

Languages:
- Python
- JavaScript
- Java
- C/C++
- Verilog
- HTML/CSS

Tools:
- GDB
- Bash
- Quartus
- MATLAB
- MongoDB
- PostgreSQL

Experience:
- OpenCV
- MediaPipe
- SoC FPGA
- HTTP/TCP/IP
- AWS EC2
- Rest APIs

Education

University of British Columbia **Graduation: May 2023**
Bachelor of Applied Science - Computer Engineering

University Transition Program
Accelerated secondary school program for gifted students funded by BC Ministry of Education.
Completes 5 years of highschool curriculum within 2 years.
Early University admission at the age of 16.

Work Experience

Robokids, Coquitlam, BC **August 2020 - Present**
Python and Robotics Teacher
Guides K-12 students with interests in robotics, coding, mathematics, or 3D design to develop their passions, complete projects, and prepare for contests.

Projects

Shawnlu.dev, Personal Project **2023**
A website that displays information about me.
• **Languages**: HTML, CSS, JavaScript
• **Technologies**: JQuery, Express.js
• Created front-end and back-end and deployed on my Raspberry Pi.

Gesture-Controlled Drone, Capstone Project **2022**
DJI Tello drone controlled wirelessly with Huawei's Atlas 200DK board.
• **Language**: Python
• **Technologies**: OpenCV, OpenPose, MediaPipe
• Programmed 5 body-posture recognition logics and processed images into commands.
• Implemented PID-tracking to keep the user's face centered during flight.

Projects

Flow, School Project **2022**
A JavaScript-program analyzer that displays diagrams to visualize function calls.
• **Language**: JavaScript
• **Technologies**: Espree, React.js
• Parsed JS-programs into Abstract Syntax Trees using espree.
• Generated diagrams using Mermaid and displayed them on a React app.

Bloq, School Project **2022**
A Domain-Specific Language that helps game developers create tiled maps easily.
• **Languages**: Java, Python
• **Technologies**: ANTLR, JavaFx
• Written an easy-to-use and unique grammar with 8 features including functions and loops.
• Performed multiple user studies for feedback, based on which, improved the final product.

M68kV6.0 System, School Project **2022**
Motorola 68000 system programmed into De1-SoC's FPGA.
• **Languages**: Verilog, C
• **Technologies**: ModelSim, FPGA, Hyperterminal
• Designed hardware circuits in Quartus including DRAM, Cache, SPI Bus & CANBus controllers.
• Interacted with the De1-SoC's DRAM and loaded C programs with hyperterminal.

Android App, School Project **2020**
A messaging App in which you can add friends and send messages.
• **Languages**: Java, JavaScript
• **Technologies**: Android Studio, MongoDB, Express.js
• Worked on both front-end and back-end as well as connecting the two ends.
• Built a RESTful API for managing user/app data and interacting with the database.

Discord Bot, Personal Project **2019**
Discord client made with discord.js for Discord Hack Week.
• **Language**: JavaScript
• **Technology**: discord.js
• Created 14 commands including checking stocks, translating messages, and searching images.

Awards

Best Slack Workshop Hack Award **2018**
UBC Local Hacks Day

Gold Award **2018**
The Queen's Commonwealth Essay Competition

CEMC Cayley Math Contest Gold Medalist/School Champion **2017**
Top 0.05% out of 20,499 contestants