Xiaoxing Liu

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3rd-year computer engineering student with 2+ years of experience in coding, proficient with C, C++, and embedded programming. Excellent time management, teamwork, and communication skills developed through various projects and professional roles.

EDUCATION

University of Toronto **2020 – 2026 (expected)**
BASc, Computer Engineering + PEY Co-op, Minoring in Engineering Business

- Courses: Software Design and Communication, Computer Fundamentals, Computer Organization, Algorithms and Data Structures, Introductory Electronics, Electrical Fundamentals, Digital Systems

SKILLS

- Programming: C++ | C | Python | ARM Assembly |Verilog HDL | HTML | CSS | JavaScript | React
- Hardware: Arduino Nano | STM32F103C8T6 | DE1-SoC
- Software: Git | Keil uvision4 | MATLAB | NetBeans | Visual Studio | Quartus | Fusion 360 | Redis
- Professional Skills: Bilingual (English, Mandarin) | Teamwork | Communication

PROJECT EXPERIENCE

Software Developer, C++ Map Application Project, U of T DemoVideo **Jan – Apr 2023**

- Developed a responsive map project (20-100 FPS) similar to Google Maps in a group of 3, querying geographical data from the OSM database and utilizing API to plot features.
- Implemented Greedy, Dijkstra's, and A* algorithms to optimize pathfinding in cities, resulting in a 40% improvement in efficiency.
- Served as the project manager and collaborated within the team using Git, acquiring effective design and communication skills essential for software development projects.
- Employed the GTK toolkit and EZGL graphics package to design a user-friendly GUI that enabled interactive map functionalities, such as search, navigation, and zooming to specified locations on map.
- Achieved 6^{th} place out of 91 groups in the Traveling Salesman Problem competition based on outstanding accuracy and responsiveness.

Developer, C Submarine Game Project, U of T **Apr 2023**

- Designed a C program running on the DE1-SoC board, enabling player interaction with on-board I/O devices such as keys, switches, LEDs, and 7-segment displays to engage in gameplay, with graphics displayed on the VGA interface.

Team Lead/Developer, Embedded Line Follower Car Project, U of T DemoVideo **Jun – Aug 2023**

- Utilized Fusion 360 for precise 3D modeling of the autonomous line-follower robot, incorporating Arduino Nano and IR sensors to realize directional transitions, forward-backward movement, and accurate tracking along complex black trails.
- Developed a Bluetooth remote-control system utilizing the STM32F103C8T6 board.

Front-end Developer, Turbine Simulator, UTWind Association **Sept 2022 – Present**

- Designed and developed a user-friendly mobile app using React, which extracted real-time data from Redis and provided users with access to information from the wind turbine.

EXTRA-CURRICULAR ACTIVITIES

Ambassador of Chinese sturgeon, China Three-Gorges Research Institute **Jun 2020** – **Present**