Xindi Hu

xindihu.hu@mail.utoronto.ca | +1 514-969-6833

EDUCATION

University of Toronto **Toronto, Canada**
B.A.Sc Computer Engineering **Sep 2021 - Jun 2026**

TECHNICAL SKILLS & AWARDS

Programming Languages: C/C++, Python, SQL, Verilog, MATLAB
Tools: Git, Linux, Unix, Deep Learning, Vim/VS Code
Awards: Dean's Honor Lists for semesters

EXPERIENCE

indie Semiconductor **Toronto, Canada**
Embedded Software Engineering Intern **May 2024 - Aug 2025**

- Collaborated with software/hardware development team to design and implement firmware validation and verification tests for Host Tools API, SDK API, and software tools using **Python, C**, and **Robot Framework**.
- Implemented test cases that interfaced with image sensors and processor chips via SPI, I²C, and UART communication protocols to validate on-device drivers and ensure reliable hardware-software integration across various APIs.
- Developed automated scripts to parse and validate 30+ APIs for multiple hardware configurations and features, achieving 100% test automation coverage.
- Utilized Git for version control and integrated Git with JIRA to manage workflows, track development progress, and handle multiple branches efficiently.

AOYUN ELECTRICS **Wuhan, China**
Embedded System Engineer Intern **May 2023 - Sep 2023**

- Engineered an advanced control algorithm using C and Verilog on a TMS320F2812 microcontroller, enhanced the Electric Fuel Car's power performance by 0.52%
- Implemented a function for real-time engine speed calculation, **integrated 3 facets of input to build a feed-back algorithm**, optimized the vehicle's power efficiency and responsiveness.
- Conducted comprehensive design verifications and collaborated with the team toward project requirements, ensured seamless code function.

PROJECTS

Object Detection Machine Learning Model **Sep 2023 - Dec 2023**

- Collaborated in an Agile Scrum team to contribute to the development of a Faster R-CNN based object detection and segmentation model for automated vehicles, focused on enhancing traffic and obstacle detection
- **Spearheaded the acquisition and processing of 100,000+ images from the various public dataset**, emphasized efficient data pre-processing and conversion to tensors for optimal Pytorch performance.
- Managed the designing the architecture of a foundational model, integrated 30+ convolution layers with multiple pooling techniques to establish a valid comparison case for the main model in our automated vehicle project
- Engaged in thorough theoretical testing and data-driven optimization of the model, focused on enhancing accuracy and robustness for its application in automated driving systems.

GIS Navigation System **Jan 2023 - Apr 2023**

- Led the vision and scope definition through initial planning meetings, established a detailed product roadmap, and formulated release plans. Facilitated team progress with regular sprint planning, daily stand-ups, and ensured continuous improvement through sprint reviews and retrospectives.
- Cached data from public APIs, including OpenStreetMap (OSM) API, into self-developed data structures, to achieve a **response time deduction of 78% in average, 99% in extreme cases** according to system timer.
- Enhanced a Dijkstra-based pathfinding algorithm to optimize route calculations, secured a distinguished 7th place ranking among over 90 teams in a competitive class setting.

"**Pixel War" Game** **Jan 2023 - Apr 2023**

- Led a two-person team in developing Pixel War Game, an acclaimed arcade-style video game designed for FPGA board. Established a git-based collaborative environment and implemented a 4-phase structured workflow.
- Utilized C programming and **hardware interrupts for efficient management of 6 IO devices**. Achieved real-time response to player inputs by handling interrupts from both the PS/2 keyboard and the DE1-Soc board, enhancing user interaction and system responsiveness.
- Crafted an engaging and visually appealing game user interface using a VGA interface, earned an outstanding coursework grade of 85% for its high playability and impressive visual aesthetics.