Tianhao Fu

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Education

University of Toronto — Toronto, ON
Bachelor of Applied Science in Engineering Science (PEY Co-op) — *Sep 2025 – May 2029*

Villanova College — King, ON
OSSD and AP — *Sep 2022 – May 2025*

Experience

Research Team Lead — Sep 2025 – Present
University of Toronto Machine Intelligence Student Team — *Toronto, ON*
- Developed the AIP Project (Automated Iterative Pseudo-labeling)

Research Intern — Aug 2024 – Present
Vector Institute (Bo Wang Lab) — *ON*
- Ranked 4th in the PANORAMA Challenge
- Ranked 4th in the SegSTRONG-C Challenge
- Helped with Fast nnU-Net

Chief — Jun 2019 – Present
Project Neura — *Toronto, ON*
- Gathering researchers and developers to bring their ideas into reality
- Developed MIP Candy (A Candy for Medical Image Processing)
- Developed LEADS (Lightweight Embedded Assisted Driving System)
- Built an infrastructure cloud compute platform with Docker

Projects

CIV102 Bridge Project | *Python* — Nov 2025 – Dec 2025
- Top 1 in the cohort and 2nd in the class of 2025
- Developed a complex cross-section composition and solving system
- Developed a bridge solver
- Calculated the optimal cross-section dimensions by turning the design into a COP (Convex Optimization Problem)

The AIP Project | *Python, CUDA, PyTorch, Docker* — Sep 2025 – Present
- Proposed an innovative way to make pseudo-labeling more efficient and effective

MIP Candy | *Python, CUDA, PyTorch, Triton* — Aug 2025 – Present
- Developed a framework that brings ready-to-use training, inference, and evaluation pipelines together with aesthetics, so users can focus on their experiments, not boilerplate
- Developed a visualization system that helps the user see the complex data
- Accelerated training with a preloading mechanism
- Accelerated sliding window custom CUDA kernels

LEADS | *Python, C++, JavaScript, FastAPI, Tkinter, Next.js* — Nov 2023 – Sep 2025
- Developed an onboard instrumentation system that displays data like the wheel speed
- Developed a webpage dashboard that remotely monitors the vehicles' status from the Pit crew
- Developed a multi-camera streaming and recording system
- Developed support for saving and replaying vehicle data
- Developed an efficient real-time data link using pure TCP/IP
- Developed a data analysis tool set that teaches the driver how to drive
- Customized the Ubuntu OS
- Developed support for multiple screens
- Developed GPS support

Technical Skills

Languages: Python, Java, C/C++, CUDA, JavaScript, HTML/CSS
Frameworks: PyTorch, Triton, Docker, Tkinter, FastAPI, React.js, Next.js