

Tianhao Fu

tianhao.fu@mail.utoronto.ca | atadc.github.io | linkedin.com/in/tianhao-fu-957188279 | github.com/ATATC

EDUCATION

University of Toronto <i>Bachelor of Applied Science in Engineering Science (PEY Co-op)</i>	Toronto, ON Sep 2025 – May 2029
Villanova College <i>OSSD and AP</i>	King, ON Sep 2022 – May 2025

EXPERIENCE

Student Researcher <i>University Health Network (Dr. Jun Ma)</i> <ul style="list-style-type: none">Helping to manage the MICCAI FLARE 2026 challengeFine-tuned MedGemma 1.5 as one of the baselinesBuilding SOTA multimodal medical image models	Apr 2026 – Present ON
Research Team Lead <i>University of Toronto Machine Intelligence Student Team</i> <ul style="list-style-type: none">Led the SegWithU Project (SegWithU: Uncertainty as Perturbation Energy for Single-Forward-Pass Risk-Aware Medical Image Segmentation)Led the AIP Project (Automated Iterative Pseudo-labeling)	Sep 2025 – Present Toronto, ON
Research Intern <i>Vector Institute (Bo Wang Lab)</i> <ul style="list-style-type: none">Ranked 4th in the PANORAMA ChallengeRanked 4th in the SegSTRONG-C ChallengeHelped with Fast nnU-Net	Aug 2024 – Sep 2025 ON
Chief <i>Project Neura</i> <ul style="list-style-type: none">Gathering researchers and developers to bring their ideas into realityDeveloped MIP Candy (A Candy for Medical Image Processing)Developed LEADS (Lightweight Embedded Assisted Driving System)Built an infrastructure cloud compute platform with Docker	Jun 2019 – Present Toronto, ON

PROJECTS

SegWithU <i>Python, PyTorch, Docker</i> <ul style="list-style-type: none">Proposed a novel single-forward-pass uncertainty estimation method that models uncertainty as perturbation energyConducted experiments that show SOTA performance on ACDC, BraTS2024, and LiTS datasets	Feb 2026 – Apr 2026
CIV102 Bridge Project <i>Python</i> <ul style="list-style-type: none">Top 1 in the cohort and 2nd in the class of 2025Developed a complex cross-section composition and solving systemDeveloped a bridge solverCalculated the optimal cross-section dimensions by turning the design into a COP (Convex Optimization Problem)	Nov 2025 – Dec 2025
The AIP Project <i>Python, CUDA, PyTorch, Docker</i> <ul style="list-style-type: none">Proposed an innovative way to make pseudo-labeling more efficient and effective	Sep 2025 – Feb 2026
MIP Candy <i>Python, CUDA, PyTorch, Triton</i> <ul style="list-style-type: none">Developed a framework that brings ready-to-use training, inference, and evaluation pipelines together with aesthetics, so users can focus on their experiments, not boilerplateDeveloped a visualization system that helps the user see the complex dataAccelerated training with a preloading mechanismAccelerated sliding window custom CUDA kernels	Aug 2025 – Present

- 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