

DINU DASSANAYAKE

Computer Engineering Student | Electrical & Embedded Systems | Available Summer 2027

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EDUCATION

University of Toronto, Toronto, ON

BASc in Computer Engineering + PEY Co-op

Sept 2025 – May 2030

SKILLS

Languages: C, C++, Verilog, Python, Java, SQL, MATLAB

Embedded & Protocols: STM32, ESP32, FreeRTOS, CAN, isoSPI, UART, I2C

Testing & Tools: Altium Designer, LTSpice, Fusion360, Linux, Git, VS Code, Multimeters, Oscilloscopes, Logic Analysers

EXPERIENCE

University of Toronto Formula Racing (UTFR), Toronto, ON

Electrical Core Member

Sept 2025 – present

- Reduced wire harnessing cost by 23% by linking the car's 4 ECUs to the central CAN bus.
- Improved driver interface score by 7 points at FSAE 2026 by designing the Tractive System Status Indicator 2-layer PCB.
- Eliminated over 600 lines of repeated C++ code by writing a unified STM32 SPI driver used on 4 of the car's ECUs.
- Automated on-hardware testing in C for 8 safety-critical sensors, successfully validating 100 Hz synchronous sampling.
- Automated STM32 flashing to a single command by implementing CLI arguments for a custom bootloader.
- Simplified bench-test debugging by developing and testing firmware for a multi-functional driver dash display.
- Built and crimped wiring harnesses and hand-soldered around 10 PCBs, sizing fuses and debugging with a multimeter.

3D Printing Labs, Markham, ON

Founder

Mar 2025 – present

- Sold over 100 custom and pre-made parts by running an FDM printing business on Ender 3 and Bambu Lab printers.
- Designed custom parts in Fusion360 and printed functional car parts in PETG.
- Recommended PLA, PETG, or TPU for each order by reviewing customer STL/OBJ files for printability within 24 hours.

Ontario Ministry of Finance, Oshawa, ON

Business and Finance Assistant

June 2026 – Sept 2026

- Improved ONT-TAXS tax filing system for Ontario businesses by running and reviewing 127 customer test cases.
- Processed 7,300 First Nations HST rebates worth \$879,000 by working alongside an 8-person team.

PROJECTS

Pitch-Axis Stabilization PID Loop on a Custom Flight Controller | [GitHub Repo + Demo](#)

Aug 2026

- Built and tuned a pitch-axis PID loop on a custom flight controller using a 1-DOF test stand.
- Fused accelerometer and gyroscope data with a custom data filter to estimate state of the beam.
- Wrote PlatformIO motor-mixing firmware using differential thrust to hold the beam level.

UT26 High Voltage Enclosure PCB | *University of Toronto Formula Racing (UTFR)*

July 2026

- Designed UT26 HV enclosure schematics in Altium Designer with STM32, CAN, and isoSPI.
- Redesigned AMS/IMD/relay plausibility fault detection with fault LEDs and an MCU shutdown relay.
- Engineered USB-C programming, 12V PWM fan control, galvanic isolation, and ESD protection.

HoodMetrics – Fume Hood Tracker & Manager | *University of Toronto Facilities & Services*

Apr 2026

- Designed a fume hood dashboard for ESP32 ultrasonic and air-velocity sensor data.
- Automated fume hood tracking every 5 minutes by writing ESP32 firmware for ultrasonic and airflow sensors.
- Held sensor-to-dashboard latency under 10 minutes by benchmarking ESP32 sash data against reference values.

Eigen – Search Without Limits | [GitHub Repo + Demo](#)

Mar 2026

- Developed a full-stack semantic search platform for educational PDFs, EPUBs, videos, and text.

LEADERSHIP INVOLVEMENT

We Care for You Charity, Markham, ON

Executive Board Member

Jan 2022 – present

- Increased community outreach by 60% from organizing food drives, cleanups, and tree planting.
- Earned York Regional Police recognition by coordinating 17 yearly community events that benefited the region.

Buddha Meditation Centre of Greater Toronto, Markham, ON

Board of Director

Apr 2020 – present

- Reduced monthly server fees by \$55 by optimizing the method of image storage for the website using JavaScript.
- Localized 18-camera security system by building a RAID 1 NAS server and NVR system with 20TB of storage.

AWARDS

Diplôme d'études en langue française (DELF) B2 | *French Ministry of National Education*

June 2025

Lieutenant Governor's Community Volunteer Award | *Government of Ontario*

June 2025