# ADITYA SHINDE

### BACHELOR OF ENGINEERING: COMPUTER ENGINEERING

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## EDUCATION

**Toronto Metropolitan University (formerly Ryerson University)**                     Toronto, ON
*Bachelor of Engineering: Computer Engineering*                                   *Sep 2022 – Apr 2027*

- Courses: COE538 - Microprocessor Systems | ELE532 - Signals and Systems | COE428 - Data Structures & Algorithms

## SKILLS

**Languages**: Java, C, C++, Python, VHDL, Matlab, HTML, CSS, JavaScript, SQL
**Frameworks**: React.js, Next.js, Node.js, Express.js
**Tools & Software**: KiCAD, LabVIEW, LabJack T7-Pro, Multisim, Git, GitHub, FPGA, VSCode, SolidWorks, Firebase, MongoDB, Quartus II, Microsoft Office

## EXPERIENCE

**Project Manager : CEN100 Engineering**                                        Toronto, ON
*Faculty of Engineering and Architectural Science*                              *Sep 2025 – Present*

- **Managed** and mentored 40 first-year students; ran weekly team meetings and presented during lab/tutorial sessions.
- Assisted with **grading**, reviewed student reflections, and provided clear, actionable feedback to improve outcomes.
- Coordinated with **course instructors** and GAs; handled student communications and completed required training.

**Software, Electrical, and Logistics Lead**                                     Toronto, ON
*Metropolitan Aerospace & Combustion Hub (MACH)*                                *Oct 2024 – Present*

- Built a real-time control stack: **C++** control algorithms, **Python** (Tkinter) GUI, and **LabVIEW** HMI/data-logging for high-rate post-flight analysis.
- Built **EGSE (Ground Support Equipment)** in an IP65 enclosure: integrated **LabJack T7-Pro** for analog I/O (pressure, temp, thrust), CLICK PLUS PLC for digital I/O, Ethernet communications, manual E-stop/lock-out, and a Go gRPC server streaming **20+ sensors** and actuating valves with <100 ms latency.
- Designed **KiCad** avionics PCBs **(RP2040, BNO055, BMP388, MCP25625)** and developed a buck converter with JLCPCB-ready layouts.

**Autonomous Navigation and Controls Team**                                      Toronto, ON
*Toronto Autonomous Systems Collective*                                         *Jan 2025 – Jul 2025*

- Developed rover navigation algorithms using **ROS2** and Gazebo on **NVIDIA Jetson Orin Nano**; integrated and fused **LiDAR**, **IMU** and camera sensors for localization and path planning.

## PROJECTS

**Portfolio Website** | *HTML, CSS, JavaScript*                        [adityashinde.vercel.app](adityashinde.vercel.app)

- Developed a personal portfolio website to showcase projects, skills, and technical write-ups.

**Liquid Rocket Avionics System** | *KiCad, PCB Design and Manufacturing*          [Avionics PCBs](Avionics PCBs)

- Helped design a **4" CAN-enabled avionics** stack in KiCad with ready-to-assemble PCB files.
- Built and validated a buck converter PCB for voltage regulation in SRAD/COTS battery packs.
- Developed firmware in C/C++ for **RP2040 MCU**, BNO055 IMU, BMP388 barometer and MCP25625 CAN transceiver and ground-station equipment.

**Audioscribe** | *React, Whisper AI, MongoDB*                         [audioscribe.vercel.app](audioscribe.vercel.app)

- Developed a real-time audio-to-text transcription tool utilizing **Whisper AI** with latency under 0.8 seconds.
- Built a responsive frontend with **Next.js**, **TypeScript**, and **React**, supporting audio uploads up to 60 minutes.
- Implemented an interactive audio visualizer for real-time transcription feedback and file uploads.

**Bank Database System** | *Java, MySQL*                                             [GitHub](GitHub)

- Developed a secure banking system in **Java Swing** supporting 100+ users for account, transaction, and PIN management.
- Utilized **MySQL** with optimized queries for efficient storage of accounts, transactions, and statements.

**Pathfinding Visualizer** | *JavaScript, HTML, CSS*                    [pathsolverdsa.vercel.app](pathsolverdsa.vercel.app)

- Interactive visualizer for pathfinding algorithms (**A\***, **Dijkstra**, **BFS**, **DFS**) using JavaScript and Python.
- Enabled real-time 100×100 grid interaction with JavaScript, updating in under 2 seconds.