ADITYA SHINDE

BACHELOR OF ENGINEERING: COMPUTER ENGINEERING

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EDUCATION

Toronto Metropolitan University (formerly Ryerson University) Toronto, Canada
Bachelor of Engineering: Computer Engineering *Sep 2022 – Apr 2027*
- Courses: Algorithms and Data Structures (Java, Python), Electrical Systems and Arduino

EXPERIENCE

Metropolitan Aerospace & Combustion Hub (MACH) Toronto, Canada
Software and Propulsion Engineer *Oct 2024 – Present*
- Created a real-time **Thrust Vector Control (TVC)** system for a liquid bipropellant rocket, implementing a **PID** control algorithm in **C++** and a Python **Tkinter** GUI for precise manual rocket movement control.
- Integrated **LabJack** T7 DAQ with a **Go gRPC** server and **C++** backend, enabling real-time sensor data streaming from 20+ devices and valve actuation with <100 ms latency.
- Custom precise **C++/Python** data logging system, capturing 300+ sensor data points/second from 20+ devices at 0.1 ms intervals for post-flight analysis.

Toronto Autonomous Systems Collective Toronto, Ontario, Canada
Autonomous Navigation and Controls Engineer *Feb 2025 – Apr 2025*
- Developed autonomous rover navigation algorithms using **ROS2** and Gazebo, integrating **LIDAR, IMU, and camera** sensors for 95% accurate GPS-based waypoint navigation.
- Implemented real-time obstacle avoidance on **NVIDIA Jetson Orin Nano** via ROS2 (**C++/Python**), ensuring safe navigation for CIRC 2025 Competition.

Metropolitan Undergraduate Engineering Society Toronto, Canada
External Committee *Sep 2024 – Mar 2025*
- Managed student **recruitment** and selection for university conferences and meetings.
- Set up meetings with Companies and Organizations and secured **Sponsorships** for MUES and MACH
- Led planning and execution of events **supporting 1000+** first-year university students.

PROJECTS

Portfolio Website | *HTML, CSS, JavaScript* https://adityashinde.vercel.app
- Developed a personal portfolio website to showcase projects, skills, and experience.

AudioScribe | *JavaScript, Whisper AI, Next.js, React, TypeScript* https://audioscribe.vercel.app
- Developed a real-time audio-to-text transcription app utilizing **Whisper AI** for speech recognition 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, Swing, MySQL* http://shorturl.at/Gisgf
- 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, Python, HTML5* https://pathsolverdsa.vercel.app
- Developed an interactive visualizer for pathfinding algorithms (**A**, **Dijkstra's**, **BFS**, **DFS**) using **JavaScript** and **Python**.
- Enabled real-time 100x100 grid interaction with **JavaScript**, updating in under 2 seconds.
- Implemented algorithm logic with customizable animation speeds and visual feedback.

Custom Online Video Call and Messanger | *Next.js, React, Tailwind CSS, Prisma, MongoDB*
- Built a real-time chat application with messaging, group chats, and read receipts using **Next.js**, **React**, and **Tailwind CSS.**
- Implemented authentication via Google, GitHub, and credentials with **NextAuth.js** and **Prisma**.
- Optimized API routes and data fetching with custom Next.js handlers and **React Server Components**.

TECHNICAL SKILLS

Languages: Java, C, C++, Python, VHDL, HTML, CSS, JavaScript, SQL
Frameworks: React.js, Bootstrap, Node.js, Express.js
Tools & Software: SolidWorks, KiCad, Multisim, Git, GitHub, VSCode, Firebase, MongoDB, Quartus II, Flutter, Microsoft Office, Figma