Ishaan Mittal

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SKILLS

Languages: Java, Python, C#, C++, JavaScript, HTML/CSS
Frameworks: React, Node.js, Express.js, FastAPI
Developer Tools: Git, VS Code, Visual Studio, IntelliJ, NetBeans, Figma, Replit
Libraries: WPILib, OpenCV, JavaSwing, WindowsForm, PhotonVision, JQuery
Hardware: Arduino, XRP, SparkMax, Limelight, LaserCan
Soft Skills: Leadership, Problem Solving, Critical Thinking, Time Management, Project Coordination

EXPERIENCE

Autonomy Software Developer   Sept. 2025 – Present
Waterloo Aerial Robotics Group   *Waterloo, ON*
- Developed a **Python-based ground station** using **MAVLink**, **multi-process (KPN) architecture**, and **computer vision** to ensure reliable drone communication and precise orientation.
- Collaborated with teams to integrate **communication** and **control modules** to improve **path accuracy.**
- Fixed issues using **testing**, **loggers**, and **debugging**, achieving **100% pylint/pytest** for maintainable code.

CyberSecurity Intern   Jul 2025 – Present
NetraScale   *Toronto, ON*
- Boosted **UI/UX** interactivity by **25%** by adding dashboards and visuals in **React** using **prompt engineering.**
- Streamlined analysis using **FastAPI**, **Chart.js**, and **prompt engineering** to create interactive timelines for activity, traffic, and threats.
- Improved client understanding by simplifying 20+ cybersecurity policies with summaries and visual aids.

First Robotics Programming Lead   Sept. 2024 – April 2025
Bishop Reding Secondary School   *Milton, ON*
- Led robot programming using **Java**, **WPILib**, and a command-based system for autonomous and teleop modes.
- Built vision pipelines with **PhotonVision** and **OpenCV** for **AprilTag** tracking and auto-alignment.
- Integrated **encoders**, **LaserCAN**, and **Limelight** for precise control, trajectory following, and driver feedback.

Professional Development Staff Cadet   Jul. 2024 – Aug. 2024
Government of Canada   *Vernon, BC*
- Initiated **daily team reflections** to provide feedback and strengthen **mentor-mentee** relationships.
- Mentored **50+** peers through sessions and evaluations to improve **knowledge transfer** and **leadership**.
- Instructed **100+** individuals on standards through guides and videos to ensure **safety** and **compliance** to rules.

PROJECTS

Greenify | *Python, JavaScript, OpenCV, Figma, ML*   Oct. 2024 – Oct. 2024
- Built a **Python ML** application to detect food waste, promoting **environmental sustainability.**
- Processed meal images with **YOLO** and **OpenCV** to generate actionable **ML data.**
- Designed **UI** in **Figma** and added interactivity with **CSS** and **JavaScript** to improve user experience.

SmartVault | *Java, OpenCV, JavaSwing, Alpha Vantage, Git*   May 2024 – Jun. 2024
- Developed a **bank simulator** with authentication, FaceID, money transfer, and stock features using **JavaSwing**.
- Implemented **facial recognition** with **Java** and **OpenCV** to provide convenient, **layered security** for users.
- Refined transfer/cashout systems and integrated **AlphaVantage API** for **10+** stocks to boost user engagement.

EDUCATION

University of Waterloo   Waterloo, ON
Bachelor of Applied Science - BASc, Computer Engineering   *Sept. 2025 – Present*

CERTIFICATIONS & AWARDS

Certifications: Introduction to MERN Stack, Introduction to Generative AI, Data Structures (Python)
Awards: Cheif Warrant Officer Badge, Royal Canadian Legion Medal of Excellence, Hack 49 Hackathon 3rd Place, CROC Mission to Mars Hackathon 1st Place, Former Top 2 Canada Brawl Stars