Karan Gupta

519-589-9063 | k79gupta@uwaterloo.ca | linkedin.com/in/Karan | github.com/Karan-Gupta07

Education

University of Waterloo Sep. 2025 – Present
Bachelor of Applied Science in Computer Engineering ***GPA**: 3.93*

Experience

Software Development Engineer Intern (Incoming) May 2026 – Aug 2026
Amazon Robotics *Toronto, ON*

Software Engineering Intern January 2026 – Present
Manulife Financial Corporation *Waterloo, ON*

- Developing automated test suites in Copado to improve Salesforce reliability by increasing organizational test coverage toward an **87%** target
- Developed data processing and visualization tools to analyze large-scale Salesforce operational data, implementing validation logic and anomaly detection algorithms to prevent critical system failures
- Supporting **GenAI driven initiatives** to improve **internal automation** and decision making across sales team

Autonomy Software Developer Sep. 2025 – Present
Waterloo Aerial Robotics Group *Waterloo, ON*

- Implemented computer vision algorithms using OpenCV2 for **real-time signal detection**, improving recognition accuracy through iterative parameter tuning and validation.
- Built multi-process telemetry and command systems in Python (PyMAVLink) to simulate UAV communication, enhancing reliability and throughput across distributed processes.

Computer Support Specialist May 2022 – Sep. 2025
C2C. Development Holdings INC *Kitchener, ON*

- Engineered a Python-based automation bot that auto-responded to Facebook Marketplace messages, improving response time by over **70%** and automating **700+ customer interactions**.
- Provided technical support in database management, hardware setup, and network troubleshooting.

Projects

DeliriumWatch | *Raspberry Pi, Arduino, Python, OpenCV, HTML, CSS, Flask, C/C++* Sep. 2025 – Nov. 2025

- Built a real time Python monitoring pipeline with secure login for Grand River Hospital staff and role based access control, resulting in over **90% reduction** in manual environmental monitoring during simulated testing.
- Implemented OpenCV based eye detection and live Flask powered web visualization with automatic alert flagging, resulting in automated sleep and blink classification and faster abnormal condition response during validation.
- Engineered serial ingestion and threshold validation, enabling multi-sensor tracking with **0 dropped readings**.

Reparo (Hack Canada 2026 Winner) | *Python, Gemini API, React, Node.js, Swift* Mar 2026 – Present

- Built agentic AI repair platform using Gemini vision models and iterative reasoning to analyze product images and generate step-by-step repair plans, required tools, and cost estimates
- Integrated Shopify Storefront API and SerpAPI to source replacement parts and create a unified checkout flow
- Won 1st place in Reactiv Track ($5,000) at Hack Canada 2026; shortlisted for Most Complex AI Hack

TailorAI (Sillouette) | *Python, OpenCV, Node.js, React, MongoDB* June 2025 – Present

- Built a full-stack AI platform using computer vision and the MERN stack, processing **200+ images** to automatically extract **10+ body measurements** per user and eliminating reliance on manual sizing inputs
- Implemented Python CV pipeline with landmark normalization, improving measurement consistency by **40%**
- Designed scalable backend APIs, MongoDB schema, and responsive React frontend, supporting **150+** item profiles, **sub-200 ms query latency**, and ongoing development in collaboration with venture partners

Technical Skills

Languages: Python, C, C++, Java, SQL, Apex, HTML, CSS
Frameworks & Libraries: Flask, FastAPI, REST API, OpenCV2, Raylib, PyMavLink, NumPy, PRAW, Arduino, Node.js
Developer Tools: Visual Studio, Git, VS Code, GitHub, Salesforce, Postman, Bruno, Docker
Awards: First Place, Amazon Robotics Hackathon; Governor General's Academic Award; Bronze Medal, Chess AI Bot Tournament