

Pranav Kukreja

Toronto, ON | kukrejap@mcmaster.ca | www.pranavkukreja.tech | GitHub: PranavReja

EDUCATION

McMaster University | B.Eng in Computer Engineering with Co-op

Expected Graduation, May 2028

- o **GPA:** 3.75/4.00 (Deans' Honours List)
- o **Extracurriculars:** Mac Robomaster Computer Vision Team, Sumobot.

EXPERIENCE

General Dynamics Mission-Systems

Ottawa, Ontario

Systems Engineering Intern

May 2025 – Present

- Developed PowerShell scripts used by system admins for troubleshooting and diagnostics, on the LC4ISR product suite.
- Built an internal RAG-Chain AI tool that assisted onboarding engineers with documentation-specific questions.
- Configured Cisco routers and switches, used in both the Department of Defence and General Dynamics networks.

STEM and Computer Science Tutor

Brampton, Ontario

1-on-1 In-Home Tutoring

May 2024 – May 2025

- Tutoring K-12 students on topics such as coding and computer science, along with math, physics, and chemistry.

XCCELERATA/SterilWize (Startup)

Mississauga, Ontario

Computer Engineering Intern

May 2022– Aug 2022

- Worked at SterilWize, a dental hygiene startup powered by a health technology start-up incubator.
- Formulated and tested Raspberry Pi based IoT devices for sterilization machines on AWS cloud platform.
- Updated the custom documentation for clients on the IoT devices.

PROJECTS

Retrieval-Augmented Generation (RAG) Chatbot System

AI Internship Project

- Created an employee on-boarding RAG application using Ollama with the Mistral 7B model for lab specific questions.
- Used all-mpnet-base-v2 embeddings with FAISS vector search to enable information retrieval over lab documentation.
- Secured budget allocation for further development and expansion of the system across the office lab environment.

Harmonize - Deployed Web App

Collaborative Media Streaming

- Built and deployed a web application enabling synchronized media playback across YouTube, SoundCloud, and Spotify, with ReactJS and stylized using PureCSS.
- Designed a backend hosted on MongoDB Atlas, leveraging MongoDB Query Language (MQL) for efficient data storage and retrieval of user sessions, room configurations, and media queues.
- Grew the platform to over 100 monthly active listeners.

Automated Home Security System

AI Home Security

- Developed a home security system that uses facial recognition and RFID secured keys to automate dorm room entry.
- Integrated a Raspberry Pi with facial recognition software to custom Arduino-based smart lock for authentication and logging, managed to achieve 6s total response time with 91% accuracy.
- Equipped Arduino with stepper motors, custom 3-D-printed apparatuses and keycard scanning capabilities to serve as a remote locking system.

Diabetic Retinopathy Medical Image Classification Model

Medical AI

- Trained an image classification model using Tensorflow on Optical Coherence Tomography (OCT) scans of patients diagnosed with diabetic retinopathy.
- Connected the model to a Flask web-app that allowed users to submit new retinal scans and get basic diagnoses supported by confidence scores. Achieved average accuracy of 84%.

SKILLS

Technical Skills: Python, C++, Typescript, Firebase (Firestore), MongoDB, VHDL, PCB Design

Frameworks/Libraries: TensorFlow, PyTorch, OpenCV, YOLO, Mediapipe, NumPy, Matplotlib, Express, ReactJS, Angular

Hardware/Tools: AWS, Raspberry Pi, Arduino, ESP32, GitHub, Visual Studio, Linux