Pranav Kukreja

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EDUCATION

McMaster University | B.Eng in Computer Engineering with Co-op   *Expected Graduation, May 2028*
- **GPA:** 3.8/4.00 (Deans' Honours List)
- **Extracurriculars:** Mac Robomaster Computer Vision Team, Sumobot.

EXPERIENCE

General Dynamics Mission-Systems   **Ottawa, Ontario**

Systems Integration Intern   *May 2025 – Present*
- Developed and executed test cases and procedures for system verification, achieving 95% test coverage across the network.
- Configured network environments that included VLANs, voice/data networks, and Microsoft applications.
- Automated test programs and validation procedures in lab environments, reducing manual testing time by 40%.

STEM and Computer Science Tutor   **Brampton, Ontario**

Freelance   *May 2024 – Present*
- Provided 1-on-1 in-home tutoring emphasizing coding and computer science, along with math, physics, and chemistry for K-12 students in weekly summer sessions.
- Developed customized lesson plans for 8 students, totaling over 16 hours of tutoring per week, enhancing their Python, HTML + CSS skills and overall STEM understanding.

XCCELERATA/SterilWize (Startup)   **Mississauga, Ontario**

Computer Engineering Intern   *May 2022– Aug 2022*
- Gained first-hand experience in SterilWize 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

Network-Attached Storage (NAS) Server   *Hosted on Custom Home Server*
- Developed a 1 TB network-attached storage server with cloud accessibility.
- Integrated VPN for secure remote access beyond local networks.
- Achieved FTP protocol transfer speeds of 10MBps with a 5ms average ping time.

Automated Home Security System   *AI Home Security*
- Developing a home security and locking 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