Krish Bhagirath

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Education

McMaster University Hamilton, ON
Bachelor of Engineering in Computer Engineering *Sep. 2024 - 2028*

- GPA: 3.9/4.0
- Awarded $20,000+ in merit-based entrance scholarships for academic excellence.

Experience

Software Engineering Intern May 2025 – Aug. 2025
Novologic *Toronto, ON*

- Refactored **15+** core Laravel controllers, implementing the **repository pattern** for scalable architecture.
- Built an **AI-driven chatbot** with **React.js** to enhance app navigation and reduce reliance on manual support.
- Generated **10+ qualified leads** through CRM-based email campaigns, creating custom HTML/CSS templates.
- Increased feature test coverage from **∼65% to ∼95%** through systematic edge-case testing and QA audits.

Software Developer Sep. 2024 – Present
McMaster Medical Engineering Design Team (Med-T) *Hamilton, ON*

- Designed **Cradlewatch**, an **embedded infant-monitoring system** that tracks infant motion and distress using sensors and servo-controlled cameras.
- Developed embedded software integrating mechanical and electrical subsystems to ensure reliable, real-time performance and safe system response.
- Building an **NLP-based CT-scan decision model** using ClinicalBERT to identify unnecessary imaging.

Machine Learning Developer Oct. 2025 – Present
McMaster Aerial Robotics & Drone Club *Hamilton, ON*

- Training **real-time** circle detection models with **TensorFlow & YOLO** to perform mission-specific vision tasks.
- Developing **SITL** drone simulations with **Gazebo and DroneKit** to validate autonomous flight logic.
- Optimizing ML inference for deployment on **Jetson Nano**, allowing for fast, stable onboard perception.

Projects

CradleWatch | *Python, Raspberry Pi, MediaPipe, OpenCV, Flask, Twilio* Apr. 2025

- Integrated real-time **facial tracking** and **emotion detection** with MediaPipe and a Vision Transformer model.
- Deployed on **Raspberry Pi** via Picamera2 and OpenCV, enabling **servo-based camera control** and video feed.
- Implemented SMS notifications using **Twilio API** to alert caregivers of prolonged distress, delivering a fully functional prototype for proactive infant care.

NBA Match Predictor | *Python, React.js, scikit-learn, GitHub Actions* Aug. 2025

- Built an **end-to-end ML pipeline** using tree-based and regression models on 8 years of NBA data, improving prediction accuracy by **∼20%.**
- Improved model robustness using rolling-window feature engineering and automated evaluation on new data.
- Created a **React UI** displaying weekly NBA predictions and historical accuracy using live NBA API data.

DeepFakeDetector | *Python, PyTorch, CNN, Vision Transformer, FFT, Next.js, FastAPI* Oct. 2025 – Present

- Developing a **hybrid detection model** integrating CNNs, Vision Transformers, and FFT models for robust detection of AI-generated images.
- Boosting model accuracy through advanced fine-tuning, frequency methods, and artifact-focused augmentations.
- Implementing a **Next.js and FastAPI** web app, utilizing Grad-CAM for visual heatmaps of deepfake predictions.

Technical Skills

Programming Languages: Python, Java, C, C++, JavaScript, PHP, SQL
Frameworks & Libraries: React, Laravel, Scikit-learn, Numpy, Pandas, PyTorch, OpenCV
Developer Tools & Hardware: Git, Visual Studio Code, Postman, Arduino, Raspberry Pi