Darshan Kasundra

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Education

University Of Toronto **Sept. 2023 - Present**
Bachelor of Applied Science (B.A.Sc.) in Computer Engineering + PEY Co-op *Toronto, ON*

- **Minor:** Engineering Business; **Certificate:** Artificial Intelligence
- **Relevant Coursework:** Deep Learning Fundamentals, Programming Fundamentals (C/C++), Software Design, Computer Organization; IP: Operating Systems, Data Structures & Algorithms, Probability & Statistics
- **Dean's List:** Fall 2024, Winter 2025

Technical Skills

Languages: Python, C/C++, C#, SQL, JavaScript, TypeScript, React, Three.js, HTML/CSS
Developer Tools: PyTorch, Numpy, Pandas, Matplotlib, Seaborn, Socket.IO, REST APIs, WebXR, Git, Microsoft Power Platform, Bash
Skills: Machine Learning, Artificial Intelligence, Agile Development, Technical Documentation, DevOps, Organization, Problem-Solving, Communication, Collaboration

Experience

Technology Intern - Maintenance Solutions **May 2025 to Aug. 2025**
Tenaris *Sault Ste. Marie, ON*

- Built predictive machine learning model for electrical consumption forecasting using **SQL** data extraction, **XGBoost algorithm**, and feature engineering, achieving **70% accuracy**.
- Developed end-to-end maintenance request application using **Microsoft Power Platform** to create a formal, structured, centralized database system, reducing operational time by **25-30 hours/month**.
- Debugged and restored legacy Health & Safety (HSE) application that had been discontinued for **6+ months**, collaborating with HSE directors to update compliance documents and saving **20+ hours/month** for the HSE team.

Tutor **Mar. 2020 to Aug. 2023**
Kumon Math & Reading Center *Sault Ste. Marie, ON*

- Tutored **100+ students** over **3 years** to develop their math and/or reading skills.
- Provided personalized feedback and evaluation on worksheets using effective **communication skills**.
- Achieved measurable results, enhancing their reading and math levels by an average of **2 levels per year**.

Projects

CVChess (GitHub) | *Python, Pytorch, NumPy, Pandas, Matplotlib* **May 2025 to Aug. 2025**

- Collaborated with a team of 4 to design a ResNet-inspired **13-Class** CNN with PyTorch to convert physical chessboard images to Forsyth-Edwards Notation (FEN) with **98.93%** square-level accuracy.
- Pre-processed **10,800+** images via **OpenCV** from ChessReD dataset through Hough Line Transform, perspective correction and board segmentation to generate a top-down warped view of chess board.
- Outperformed state-of-the-art traditional approaches by over **4x**, achieving **63.9%** board-level accuracy compared to **15.6%** baseline.

The Transit App - Geographic Information System (GIS) Software Application | *C++* **Jan. 2025 to Apr. 2025**

- Developed a full-stack **C++** mapping application with multi-modal transportation routing, implementing **Git** version control and integrating **StreetsDatabase** and **OSMDatabase APIs** with **EZGL/GTK** UI frameworks.
- Optimized pathfinding performance by implementing **Dijkstra** and **A*** algorithms using **C++ STL containers**, achieving efficient time-optimal route calculations across large datasets.
- Designed intuitive UI features including predictive search functionality and layered transit visualization to maximize application usability.

Public Speaking VR Simulator (GitHub) | *Python, Three.js, Google Gemini API, WebXR, Socket.IO* **Feb. 2025**

- Engineered a real-time **VR public speaking environment** by integrating **Three.js** with **WebXR API** featuring **6** interactive audience avatars for realistic speech simulation.
- Implemented bi-directional communication using **Socket.IO** and **Flask** backend, creating a speech processing pipeline that combines **real-time audio transcription** with **Google Gemini API** for dynamic Q&A generation.
- Developed an immersive **UI system** featuring a floating question display, interactive timer, and VR-optimized button controls.

Phish Email Detector (GitHub) | *Python, PyTorch, Google Colab, Kaggle, React.js, Flask* **Oct. 2024**

- Developed AI-powered email security solutions utilizing transformer **neural networks** for advanced phishing detection.
- Engineered data pipeline for **18k+ emails with 80% efficiency** and tokenization for enhanced model feature recognition.
- Achieved **95% detection accuracy** in **10 epochs** with GDPR-compliant zero-storage architecture.