# Dev Mody

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## Education

**McMaster University** Hamilton, ON

*Bachelor of Applied Science in Honours Computer Science (Co-Op)* *09/2022 – 04/2026*

- **Relevant Coursework:** Computer Architecture, Machine Learning, Data Structures & Algorithms, Databases & SQL, Probability and Statistics, Cryptography, and Data Mining
- **Awards:** Engineering Award of Excellence, Dean's Honour List

## Technical Skills

**Programming Languages**: Python, C++, SQL, COBOL, HTML/CSS, Java, Javascript, Bash, C, Haskell, Perl

**Frameworks**: React.js, Next.js, Node.js, TensorFlow, PyTorch, Flask, Django, MediaPipe

**Libraries & Tools**: NumPy, Pandas, Scikit-learn, OpenCV, NLTK, Git, Matplotlib, Seaborn, SciPy

## Experience

**Project Team Lead / Project Manager** 09/2024 – Present

*McMaster Artificial Intelligence Society* *Hamilton, ON*

- Leading the FormFit subteam, a physiotherapy form evaluation app using Computer Vision, to present at CUCAI 2025.
- Delegating tasks, and mentoring team members within an Agile environment.
- Organizing meetings, tracking progress, and providing regular updates to stakeholders.

**Junior Software Developer Intern** 07/2024 – 08/2024

*DCM* *Mississauga, ON*

- Assisted with COBOL scripts for production printers that perform print jobs for CIBC, TD Bank, and SunLife
- Played a key role in system migration and developed UNIX scripts for secure printing.
- Contributed C/Python code to internal projects, where I collaborated in an Agile environment
- Participated in code reviews and testing, and maintained detailed documentation.

## Projects

**Biosense Pneumonia Detector**

*Data Analysis and Machine Learning* *Python, TensorFlow, Pandas, Next.js, DigitalOcean, Flask*

- Designed a machine learning CNN model using TensorFlow to detect pneumonia from medical chest X-ray images.
- Developed a Flask and Linux backend to handle server-side operations
- Developed an interactive Next.js front-end for real-time predictions and visualization of diagnostic results.

**Solar Flare SVM Classifier**

*Astronomy, Machine Learning and Data Analysis* *Python, Scikit-Learn, Matplotlib, NumPy, Pandas*

- Implemented a Support Vector Machine from a machine learning research paper to predict solar flares using NOAA datasets.
- Designed and optimized experiments, including feature selection, data normalization, and K-Fold CV, to improve performance.
- Analyzed results using True Skill Statistics (TSS) and visualized outcomes through confusion matrices and TSS graphs.

**Intrusion Detection System Model**

*Machine Learning and Cybersecurity* *Python, Scikit-Learn, TensorFlow, Pandas, NumPy, Seaborn, Matplotlib*

- Built a NIDS using CNN, Random Forest, and SVM models to detect 12 network attack types with high accuracy on CICIDS 2017 dataset.
- Designed a 3-level hierarchical SVM classifier (binary, attack group, specific attack) using SMOTE sampling for imbalanced data.
- Optimized model architectures through cross-validation, achieving strong F1-scores across CNN (5 layers), Random Forest (n=100-200), and SVM configurations.