

Om Patel

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EDUCATION

McMaster University

Hamilton, ON

Bachelors in Honors Computer Science (Co-op), Minor in Statistics

09/2022 – 04/2026

- **Relevant Coursework:** Computer Systems and Architecture, Machine Learning, Automata and Computability, Databases and SQL, Probability and Statistics, Data Privacy
- **Awards:** Engineering Award of Excellence, Dean's Honour List

TECHNICAL SKILLS

Programming Languages: Python, C++, SQL, MATLAB, Golang, HTML/CSS, R, Java, Javascript, Bash

Frameworks: TensorFlow, PyTorch, Flask, Django, MediaPipe

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

PROJECTS

Exercise Pose Recognition System

11/2024 – Present

Computer Vision & Pose Estimation Project

Python, TensorFlow, OpenCV, MediaPipe, Pandas, NumPy

- Developed a system for recognizing and analyzing exercise poses using MediaPipe for real-time pose detection.
- Implemented joint angle calculations and key-point extraction for tracking movements and posture in exercise videos.
- Built a data pipeline to extract and save key-point coordinates in CSV format for analysis and visualization.
- Integrated OpenCV to annotate videos with pose landmarks and angles, providing visual feedback for users.

Dimensionality Reduction with PCA on Real & Synthetic Datasets

10/2024 – 11/2024

Data Analysis and Feature Extraction

Python, NumPy, Scikit-learn, Matplotlib, Pandas

- Applied PCA and SVD for dimensionality reduction on the LFW and Synthetic TNC datasets.
- Visualized face images and noisy circle data, extracting features and eigenvalues using PCA.
- Demonstrated PCA's ability to separate classes in 2D noisy circle data.
- Implemented PCA transformation and visualized reduced dimensions to assess data representation..

Network Scanner

04/2024 – 05/2024

Personal Project

Python, Scapy, Socket, TCP/IP

- Developed a Python-based network scanner using Scapy to identify devices within a local subnet.
- Implemented ARP and Ethernet packet crafting for network discovery and IP-to-hostname resolution.
- Generated detailed device reports, including IP, MAC addresses, and hostnames, for network analysis.

EXPERIENCE

Software Programming Instructor

07/2024 – Present

Ultimate Coders

Toronto, ON

- Designed and implemented a comprehensive computer science curriculum in Python, Java, and C++, resulting in 95% student satisfaction.
- Facilitated coding workshops, improving student performance by 20% in both exam scores and coding abilities.
- Created interactive learning materials that elevated student engagement by 30% in key programming concepts.

Administrative Assistant

06/2021 – 01/2022

BAPS Charities

Toronto, ON

- Streamlined office workflows using project management tools, improving team efficiency by 20%.
- Coordinated 7+ technical meetings and prepared documentation for 5+ software projects.
- Managed databases and tracked project progress, ensuring 100% data accuracy.