HETU PATEL

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Ambitious Computer Science student with full-stack development experience, a strong foundation in AI/ML, and a proven track record in student leadership and advocacy.

EDUCATION

Toronto Metropolitan University (Formerly, Ryerson University) **Expected Graduate 2026**

Bachelor of Science (Honours)**, majoring in **Computer Science** and **minor in Business Management.

- Fundamentals of Computer Science, Computer Organization, Data Structures and Algorithms, Software Engineering, C and Unix/Linux, Ethics, Discrete Mathematics, Calculus, Linear Algebra, Probability and Statistics, Machine Learning, Data Mining, Computer Vision, Human-Computer Interaction, Computer Security, Operating Systems, Discrete Structures.

EXPERIENCE

Scotiabank **Jan 2024 - Aug 2024**

Technology Trainee

- Secured a coveted mentorship in Scotiabank's Women in Technology Mentorship Program (Unlock Your Future 2024). This program provided invaluable career exploration through rotations across **data analyst, software developer, and project manager teams**. These rotations helped me solidify my path in technology.

SEAPAX **Jan 2024 - Apr 2024**

Web Developer Intern

- Increased SEAPAX's online engagement by **20% (session duration)** and **15% (reduced bounce rate)** through the development of a user-friendly product website. Built a **Venture Capital CRM system** that streamlined **lead nurturing by 30%**, improving communication and conversion for potential investors.
- Engineered 100% improvement in website functionality through responsive software solutions using **Agile methodologies**. Utilized a **tech stack** to handle high volumes of concurrent B2B user sessions, ensuring seamless B2B operations.

Toronto Metropolitan Students' Union **Dec 2023 - Apr 2024**

Vice-President of Education

- Representative of the organization in external collaborations and provisional-federal conferences and the one to address the media requests on regular basis.
- **Lobbying** university administration on academic issues, **leading campaigns** addressing member concerns and representing the corporation in community coalitions and through regular **engagement** with course unions, student groups, and **town halls**, I prioritize **open dialogue**. Conducting surveys and research, I ensure every student's voice is integral to our academic community's decisions.

Invision Software Solution **Sept 2022 - Dec 2022**

Software Engineer Intern

- Utilized **Agile methods (e.g., Scrum)** to gather client technical needs and employed **API integration techniques** to deliver 3 impactful projects.
- Showcased full-stack development skills across diverse projects using technologies like **Python, ReactJS, LAMP stack**, **Django, Unity, and ARCore.** Delivered innovative solutions like **AR/VR construction visualization software**, enhancing communication and project efficiency.

PROJECTS

OurMeal App

Windows Application

- Designed a prototype app in **Visual Studio 2022 using Visual Studio and .NET framework**, employing event-driven programming and **graphical user interface (GUI)** design principles to enhance usability and streamline household supply management.
- Developed **two distinct interfaces**, one for fridge door interaction and another for mobile devices, focusing on **human-computer interaction (HCI)** techniques such as contextual navigation, intuitive screen layouts and workflow optimization to ensure a seamless and user-friendly experience.

Automated Basketball Object Detection and Tracking

Software Application

- Developed a basketball analytics system using **AI-driven YOLOv8 and Roboflow models**, achieving **73.7% mAP50-95** for real-time player, ball and rim detection after **fine-tuning over 15 epochs**.
- Utilized advanced machine learning techniques like **UMAP, K-means clustering, ONNX runtime and CUDA for GPU-accelerated training**, enabling accurate team classification and reducing runtime to **9.6ms per frame** for live sports applications.

Clustering Analysis of Diabetes Risk and Progression

Research Paper

- Preprocessed the **Pima Indian Diabetes dataset** by handling missing values, scaling features with **MinMaxScalar**, and conducting exploratory analysis using **correlation heat maps and pair plots**. Applied **K-Means and Hierarchical Clustering** to classify individuals into Low, Medium and High-Risk categories based on health like glucose, BMI and insulin levels.
- Visualized clustering results with **scatter plots, radar charts, and dendrograms provide actionable insights for early detection and tailored diabetes interventions** while comparing algorithm efficiency and structure insights.

SKILLS

- **Programming Languages:** Python, Java, C, Bash, Lisp, R, Assembly Language, Javascript, HTML and CSS, LaTeX, Smalltalk-80, Elixir, Rust, Haskell, PHP, SQL, Visual Basic
- **Tools/Frameworks/Libraries:** VS Code, Git and Github, Microsoft Azure, Google Colab, AWS, GCP, Agile and SCRUM, SDLC, Django, Node.js, React, Tailwind CSS, iQuery, MySQL, DBMS, MongoDB, Oracle DB, TensorFlow, PyTorch, sci-kit-learn, Keras, Roboflow, OpenCV, Siglip Vision, Pandas, NumPy, Matplotlib, JUnit, Wireshark, OpenSSL, Pharo, Figma, .NET, Visio, Power BI

EXTRA-CURRICULARS

Current

Founding President —Hindu Students' Association at Toronto Metropolitan University
Senate and its standing committees — Toronto Metropolitan University [Re-elected]

Past

President — Academic Integrity Ambassadors
Only Student Representative — **Academic Plan 2025-30 Advisory Group** of Toronto Metropolitan University