HETU PATEL

+1 (416)-770-3936 | Toronto, Canada. | hetu.patel@torontomu.ca | https://www.linkedin.com/in/hetu-patel-toronto/
</> https://hetuvpatel.github.io/hetu-patel-portfolio/ | https://github.com/hetuvpatel

EDUCATION

Toronto Metropolitan University (Formerly, Ryerson University) **Jan 2023 - June 2027**
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.

SKILLS

- **Programming Languages:** Python, Java, C, Bash, Lisp, R, Assembly Language, Javascript, HTML and CSS, LaTeX, Smalltalk-80, Elixir, Rust, Haskell, PHP, SQL.
- **Tools/Frameworks/Libraries:** Git and Github, Microsoft Azure, 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, VB.NET, Visio, Power BI

EXPERIENCE

Undergraduate Research Assistant | Department of Computer Science, Toronto Metropolitan University **May 2025 - Present**

- Working under the supervision of **Dr. Eric Harley** and in collaboration with Computer Science and Journalism faculties on the **JeRI (Journalism Representation Index)** project to enhance news source classification using **LLMs** and **NLP** techniques.
- Assisting with **data preprocessing, prompt engineering, and model evaluation** to support the development of software that classifies cited entities in news articles (e.g., organizations, experts, authorities) and assesses sourcing balance across **diverse media datasets.**

Technology Trainee | Scotiabank **Jan 2024 - Aug 2024**

- Secured a coveted spot in **Scotiabank's *Unlock Your Future: Women in Technology 2024*** program, completing impactful rotations across data analyst, software developer, and project manager teams to solidify my path in tech.

Web Developer Intern | SEAPAX **Jan 2024 - Apr 2024**

- 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.

Software Engineer Intern | Invision Software Solution **Sept 2022 - Dec 2022**

- 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.

Vice-President of Education | Toronto Metropolitan Students' Union **Dec 2023 - Apr 2024**

- Led **academic advocacy and external representation** as VP Education, engaging in **university lobbying, media relations, and federal conferences** while driving student-focused campaigns through research, consultations, and collaboration with course unions and student groups.

PROJECTS

OurMeal App | Github

- **Designed and developed a smart Windows desktop application in Visual Studio 2022 using VB.NET, .NET 6.0, and Windows Forms**, applying event-driven programming and GUI design principles to streamline household supply and meal planning through features like draggable shopping lists, sticky notes, and recipe management.
- **Engineered dual interfaces for fridge door interaction and mobile use**, utilizing human-computer interaction (HCI) techniques such as contextual navigation, intuitive screen layouts, and workflow optimization to deliver a seamless and user-friendly experience across platforms.

Automated Basketball Object Detection and Tracking | Github

- **Developed an AI-driven basketball analytics system using YOLOv8 and Roboflow**, achieving **73.7% mAP50-95** for real-time player, ball, and rim detection after fine-tuning over 15 epochs, with **GPU-accelerated inference (9.6 ms/frame)** using ONNX Runtime and CUDA.
- **Implemented robust team classification using Siglip Vision embeddings, UMAP for dimensionality reduction, and K-Means clustering**, enabling accurate identification of teams and referees in dynamic footage, with intuitive gameplay visualization and live annotation capabilities.

Stroke Risk Prediction Using Machine Learning | Github

- **Engineered a machine learning pipeline using Python and scikit-learn to predict stroke likelihood based on healthcare and demographic data**, implementing advanced preprocessing techniques such as SMOTE, RFE, and StandardScaler for class balance, feature selection, and normalization across the data.
- **Developed and evaluated five ML models (Logistic Regression, Decision Tree, Random Forest, KNN, SVM)**, achieving up to **96.66% accuracy** with a custom **Stacked Ensemble Model**, and visualized model performance using accuracy, F1 score, and ROC AUC metrics for optimal clinical insight.

EXTRACURRICULARS

Founding President —Hindu Students' Association at Toronto Metropolitan University **[2024 - Present]**
Senate and its standing committees — Toronto Metropolitan University [Re-elected] **[2023 - Present]**
President — Academic Integrity Ambassadors **[2024 - 2025]**
Only Student Representative — **Academic Plan 2025-30 Advisory Group** of Toronto Metropolitan University **[2023 - 2025]**