

# Manav Patel

1-(647)-965-6728 | [manav1.patel@torontomu.ca](mailto:manav1.patel@torontomu.ca) | [linkedin.com/in/manavpat](https://www.linkedin.com/in/manavpat) | [github.com/mpat247](https://github.com/mpat247) | [manavpatel.me](https://manavpatel.me)

## EDUCATION

### Toronto Metropolitan University

Master of Engineering in Computer Engineering, AI Specialization  
Bachelor of Engineering in Computer Engineering, Software Specialization

Toronto, ON, Canada

May 2024 – Dec 2025 (Expected)  
Sept 2019 – Apr 2024

## EXPERIENCE

### Junior Software Engineer

Cashly Inc.

Nov 2024 – Present

Oakville, ON, Canada

- Contributed to the end-to-end development of a scalable AI-driven platform, building modular backend services and frontend interfaces using the **PERN** stack.
- Designed and implemented robust database structures, ensuring reduced query execution times and enabling efficient data retrieval for dynamic client interactions.
- Collaborated on integrating and optimizing machine learning models, improving accuracy in core platform functionalities.

### Teaching Assistant

Toronto Metropolitan University

Sept 2024 – Present

Toronto, ON, Canada

- Managed labs on Introductory **Java** programming, including **OOP** and **JUnit**, and on **Software Design and Architecture**, focusing on design principles and microservices.
- Assisted with troubleshooting **NetBeans**, **Apache Tomcat**, and **Google Cloud** deployment tools, ensuring smooth lab sessions.
- Coordinated lab schedules, assignments, and exam prep, ensuring clear communication with **50+** students per semester.

### Software Engineer Intern

FGF Brands

May 2023 – Aug 2023

Toronto, ON, Canada

- Optimized Intranet and Workflow Management Portals with **20+** features using **ASP.NET MVC**, streamlining workflows and increasing usage by **35%** across **1,500+** employees.
- Enhanced the vendor management application integrated with **SAP**, boosting productivity by **20%** through automation of appointment scheduling and invoice submissions.
- Refined **MS SQL Server** databases and integrated **Power Automate** workflows, reducing data processing times by **95%** and enhancing system efficiency.
- Implemented automated tests using **Selenium** with **C#**, decreasing bug occurrences by **10%** and enhancing application reliability.

### Software Engineer Intern

Lockheed Martin

Sept 2022 – Apr 2023

Ottawa, ON, Canada

- Developed **RESTful APIs** with **Express.js**, improving data exchange between the server and client.
- Designed and maintained **PostgreSQL** databases, optimizing server logic and queries to cut response times by **30%** across two full-stack applications.
- Assisted in developing **NLP** and **Reinforcement Learning** models with **Python**, and **Jupyter**, for an internal professional development platform, improving the completion of training tasks by **45%**.
- Attained **90%** code coverage using **JEST** unit tests, enhancing code quality and minimizing bugs.

## PROJECTS

### ResNet with RDEnet Oscillation Block | [GitHub](#)

Dec 2024

- Designed an architecture integrating a custom-designed **RDEnet Oscillation Block** model into **ResNet18** to improve image classification on a polluted **FashionMNIST** dataset, addressing rotational and noise-induced variations in the dataset.
- Evaluated model performance under original, polluted, and mixed data scenarios with **5-fold cross-validation**, achieving a **7%** increase in accuracy over baseline models.
- Implemented a comprehensive machine learning pipeline using **PyTorch**, encompassing data preprocessing, model training, hyperparameter finetuning and evaluation to enhance image classification performance.

### BiasAware - Engineering Capstone Project | [GitHub](#)

Apr 2024

- Conducted prompt engineering to generate **3,000+** images across **12** social biases, establishing a comprehensive database for analyzing biases in AI-generated images.
- Trained and fine-tuned a **Stable Diffusion** model using **HuggingFace** to generate and assess biased images, enhancing the identification and understanding of social biases.
- Developed a responsive web application with **MongoDB**, **Express.js**, and **React** to present the bias analysis results effectively.

## TECHNICAL SKILLS

**Languages:** Python, JavaScript, Java, C, C++, C#, MATLAB, SQL, HTML/CSS

**Frameworks/Libraries:** React, Node.js, Express.js, PyTorch, TensorFlow, Keras, Scikit-Learn, pandas, NumPy, Matplotlib, HuggingFace, JUnit, Jest, TestNG, Selenium

**Databases:** Oracle DB, PostgreSQL, MySQL, MongoDB, Microsoft SQL Server

**DevOps:** AWS, Azure, Google Cloud Platform, Docker, Kubernetes

**Developer Tools:** Git, Jira, Jupyter, Google Colab, VS Code, PyCharm, IntelliJ IDEA, Visual Studio