Manav Patel

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EDUCATION

Toronto Metropolitan University (Formerly Ryerson University)   **Toronto, Ontario, Canada**
MEng. Electrical and Computer Engineering – Artificial Intelligence, GPA: 3.7/4.0   *May 2024 – Aug 2025 (Expected)*
BEng. Computer Engineering – Software Specialization   *Sept 2019 - Apr 2024*

- **Relevant Coursework:** Data Structures & Algorithms, Software Design & Architecture, Object-Oriented Programming, Operating Systems, Distributed & Cloud Computing, Intelligent Systems, Software Testing, Network Security

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, TypeScript, Go, C, C#, SQL, HTML/CSS
Libraries/ Frameworks: Express, React, Next, FastAPI, Flask, Django, ASP.NET, JUnit, Selenium, gRPC
Data: PostgreSQL, MongoDB, MySQL, SQL Server
DevOps: Docker, Kubernetes, GCP, AWS, Azure, GitHub Actions
Other: Git, Postman, Redis, RabbitMQ, Wireshark, VS Code

WORK EXPERIENCE

ML Research Assistant   **May 2025 – Present**
Toronto Metropolitan University – Computer Vision & Image Processing (CVIP) Lab   *Toronto, Ontario, Canada*

- Supporting research on CT image denoising by enhancing a CNN-based architecture (SCUNet) with transformer modules (NGSwin) to improve feature learning and metal artifact suppression.

Software Engineer Intern   **Nov 2024 – May 2025**
Cashly Inc.   *Oakville, Ontario, Canada*

- Built a communications system with Twilio and Gmail API, allowing users to automate campaigns and increase lead outreach by **3x**.
- Automated workflows using **n8n**, integrating LLMs to extract data from unstructured inputs, reducing manual effort by **60%**.
- Refactored codebase for an AI-driven CRM to a **Next.js** and Supabase application, reducing technical debt and optimizing structure.

Graduate Teaching Assistant   **Sept 2024 – Apr 2025**
Toronto Metropolitan University   *Toronto, Ontario, Canada*

- Led **Java** OOP, **JUnit** testing, and software architecture labs, providing hands-on instruction in debugging, deployment, and best practices using technologies such as **Tomcat, MySQL, Kubernetes, Docker, and Google Cloud** for **50+** students per semester.

.NET Software Developer Intern   **May 2023 – Aug 2023**
FGF Brands   *Toronto, Ontario, Canada*

- Engineered new features for the Intranet, Workflow Management, and Vendor Management Systems using **ASP.NET MVC**, improving usability for **1,500+** employees.
- Implemented automated unit tests with **Selenium** and **C#**, achieving **85%** test coverage and minimizing bugs before deployment.

Backend Developer Intern   **Sept 2022 – Apr 2023**
Lockheed Martin   *Ottawa, Ontario, Canada*

- Built **REST APIs** with **Express.js** for CRUD operations and managed a **PostgreSQL** database for an internal training platform.
- Refactored an NLP pipeline to extract and categorize training data from large documents using **SpaCy** and **RoBERTa**.
- Integrated the pipeline into the training platform to automate text mining and streamline training recommendations.

PROJECTS

JobOS | *Next.js, Django, Supabase, LLMs, Redis, Celery, Docker, AWS*   🔗 **jobos.tech**

- Developed a job board and scraping platform that lets users view or auto-add job listings by simply providing a company name.
- Designed a pipeline that extracted job listings from **500+** companies by searching for career sites via DuckDuckGo Search API and dynamically crawling top-ranked URLs with Crawl4AI library, **Playwright**, and small **LLMs** to locate exact career pages.

BiasAware - Capstone Project | *React.js, Express.js, MongoDB, Python, HuggingFace, Render*   🔗 **biasaware.social**

- Spearheaded the development of a research-driven full-stack web app showcasing social biases in AI-generated images.
- Assembled a dataset of **3,000+** images across 12 bias categories using prompt engineering to analyze biases.
- Trained and fine-tuned a **Stable Diffusion** text-to-image model on a custom dataset to study and reveal bias in GenAI models.

Team8 | *Flutter, Go, PostgreSQL, AWS, GitHub Actions*   🔗 **team8.live**

- Built a mobile and web app using **Flutter, Go,** *and* **PostgreSQL**, enabling users to discover and chat about sports and gaming plans.

DealScout | *Angular, Spring Boot, MySQL, RabbitMQ, Kubernetes, Google Cloud*   🔗 **dealscout.site**

- Built a price comparison tool that scrapes and ranks listings from online stores using Selenium and custom ranking logic.
- Deployed containerized microservices with **Docker** and **RabbitMQ** on **GKE** and hosted the frontend on **Cloud Run**.