Manav Patel

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EDUCATION

University of Calgary Alberta, Canada
Bachelor of Science in Computer Science | GPA 3.92/4.0 (Dean's List 2023-2025) *Sept. 2023 – April 2027*

EXPERIENCE

Deputy Vice-President Jul 2024 – Present
The CyberSecurity Club | AWS, Docker, CTFd, Digital Ocean, Python, Java, C, C++ *Calgary, AB*
- Enabled rapid, scalable deployment of **40+ CTF challenges** by implementing **Docker containerization** across **multiple national hackathons**, resulting in improved environment stability for **70+ teams**
- Maintained **zero downtime** and supported **100+ teams** during major club events by provisioning **AWS EC2** instances with fault-tolerant architecture, enhancing reliability for club websites serving **1,700+ members**

Software Development Engineer Apr 2025 – Aug 2025
Independent Professional | Azure DevOps, Docker, Python, Java, C, PowerShell, Git *Remote, Canada*
- Spearheaded developments to enable scalable infrastructure and deployment automation on **Azure DevOps**, supporting high-profile **national events** (organized by MasterCard, Enfocom), handling up to **500 participants**
- Achieved **35% reduction** in QA cycles and improved system reliability across competition environments by authoring **20+ build** and **validation scripts** for automated challenge testing
- Engineered **end-to-end CI/CD workflows** leveraging **Docker**, resulting in **30% reduction** in deployment time

Software Development Research Intern May 2025 – Aug 2025
University of Calgary | C++, OpenMP, Boost, NTL, GProf, Sage, Pari GP, Linux, Git *Calgary, AB*
- Selected as a research intern among **200+ applicants** to develop **optimized C++ algorithms** to facilitate **large-scale tabulation** of cubic number fields beyond the **1,000,000 fields** covered in 1990
- Implemented optimizations to achieve a $\sqrt{n}$ runtime improvement, **reducing compute time** by **71 days**

Machine Learning Research Intern Apr 2024 – Jun 2024
Vision Research Lab | Python, PyTorch, BERT, CLIP-ViT, BLIP, Flask, TailwindCSS, HTML *Calgary, AB*
- Led a **6 member team** in developing a **sentiment analysis model** designed to analyze social media posts
- Developed and optimized data preprocessing and augmentation pipelines, applied **hyperparameter tuning** and **regularization techniques** to mitigate overfitting, resulting in a **17% increase** in model prediction accuracy
- Leveraged advanced **LLM Model Ensemble** techniques and integrated **CLIP Vision-Transformer** to jointly analyze **multi-modal inputs**, achieving **80% accuracy** in overall **contextual sentiment prediction**

PROJECTS

Athletica | *Java, SpringBoot, SpringCloud, Gemini API, RabbitMQ, Keycloak, AWS, MongoDB* Jul 2025 – Present
- Building a **microservice architecture** fitness app with **Spring Boot** and **Gemini's AI** recommendations.

NutriSync | *Python, Flask, React, TypeScript, NodeJS, PostgreSQL, psycopg2, Scikit-Learn* Apr 2025
- Directed a 4 member team to create a **full stack** recipe management system with **REST API**, role based access levels (member, moderator, admin), **restricted session based access** and **automatic URL redirection**.
- Built a personalized **recipe recommendation system** using **Scikit-Learn**, achieving **85% positive** user experience through tailored suggestions using **past analytics** (likes, tracked recipes), based on **250+ reviews**

Game Center | *Java, Maven, Figma, JUnit, JavaFX, SceneBuilder, CSS* Jan 2025 – Mar 2025
- Led a **10 member** software engineering team in designing and delivering a scalable **game hub platform** with a fully functional **matchmaking system** connected to a database enabling users to play multiple games seamlessly
- Authored **75+** unit, integration, and end-to-end tests using **JUnit**, achieving **90%+ code** test coverage

TECHNICAL SKILLS

Languages: Python, Java, C/C++, SQL, TypeScript, HTML/CSS, Assembly
Developer Tools, Frameworks & Libraries: TensorFlow, PyTorch, Keras, Flask, SpringBoot, React, NodeJS, ASP.NET, pandas, TailwindCSS, OpenMP, Tkinter, BeautifulSoup, Figma, JUnit, Git, VSCode, Linux