Neil Varshney

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Education

Carleton University — *Ottawa, ON*
Bachelor of Computer Science — *Sept 2023 – Present*

- **Field:** Computer & Internet Security
- **CGPA:** 10.75/12 (A-)
- **Awards:** Dean's List (2x), Chalmers Jack MacKenzie Scholarship, Henry Marshall Tory Scholarship
- **Relevant Coursework:** Abstract Data Types & Algorithms, Applied Crypto & Authentication, Intro to Software Engineering, Fundamentals Web Applications, Discrete Structures II

Technical Skills

Front-End Development: JavaScript, TypeScript, React.js, Next.js, Tailwind CSS, CSS, HTML
Back-End Development: MongoDB, SQLite, Flask, FastAPI, RESTful APIs, Node.js, Deno
Languages & Tools: Python, Java, C++, C, GitHub, Git, npm, Unix/Linux, VS Code
Machine Learning & AI: PyTorch, Pandas, NumPy, Scikit-learn, Natural Language Processing (NLP)

Projects

Fake News Detector ‖ *ML, Python, JavaScript, React, SQLite, HTML/CSS*   🔗 *Fake-News-Detector* ↗

- Engineered a fake news classifier using **Python**, **BERT embeddings**, and **logistic regression (scikit-learn)** to analyze text patterns, achieving **98.8%** accuracy and **99.0%** precision on **8,000+** held-out test articles
- Architected **RESTful API** with **JWT authentication** and **SQLite**, implementing secure user registration/login with password hashing and protected endpoints for news analysis requests
- Developed full stack application with **React.js** frontend and **Flask** backend, supporting concurrent user sessions, persistent history tracking, and real-time confidence score visualization for enhanced user engagement

Anime Haven ‖ *LLM, Python, JavaScript, React, FastAPI, SQLite, HTML/CSS*   🔗 *Anime-Haven* ↗

- Developed a **full-stack** anime recommendation chat-bot using **React.js** frontend and **Python FastAPI** backend, serving personalized anime suggestions through natural language processing and AI integration
- Implemented real-time **conversational AI features** using React Hooks for state management and **GROQ inference engine** achieving **0.80-second** average response times
- Engineered a responsive user interface with real-time typing animations and markdown support, implementing secure user authentication and **SQLite** database integration for persistent chat history

Password Manager ‖ *Python, Flask, MongoDB, JWT, JavaScript CSS, HTML*   🔗 *Password-Manager* ↗

- Developed a **full-stack** password management application using **Flask** and **MongoDB**, implementing **secure user authentication** with **JWT tokens** and bcrypt password hashing for enhanced security
- Engineered **server-side encryption** using the cryptography library with **PBKDF2 key derivation (100,000 iterations)**, ensuring passwords are encrypted at rest and decrypted with the master password
- Built a **responsive web interface with HTML/CSS/JavaScript**, implementing **RESTful API** endpoints for user registration, authentication, and password **CRUD operations** with proper error handling and validation

Extracurricular Activities

Carleton Computer Science Society: Member — *Sept 2023 – Present*
Intermurals Soccer: Participant — *Sept 2024 – Present*