Portfolio site: nickw.tech
GitHub: github.com/nickwood5

Nick Wood

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Education

Computer Engineering, 3rd Year | University of Toronto   *September 2020 – Present*

- Pursuing a double minor in **Artificial Intelligence** and **Business**.
- Relevant courses: Algorithms and Data Structures, Operating Systems, Computer Networks, AI Fundamentals.

Skills

Programming Languages: C, C++, Python, JavaScript, SQL, Java, HTML5, CSS3, MATLAB, VBA, ARM Assembly

Platforms/Tools: Amazon Web Services, Heroku, Git, Linux Shell (Bash), Valgrind, Xano, Webflow

Libraries/Frameworks: Python: Flask, Django, Pytorch, Websockets | JavaScript: ReactJS, Three.js, TypeScript

Experience

Software Developer | Absolute Engagement   *May – August 2022*

- Prototyped and developed the backend infrastructure for a flagship software-as-a-service application, including **SQL** database architecture, **REST API** endpoints, and recurring user notification functions.
- Integrated third-party API services to deliver critical app functions: two-factor authentication, email delivery/tracking, poll reporting, automatic Word/PDF document generation, and support chat using **Intercom**.
- Implemented frontend functionality by linking the user interface to API endpoints using **WebFlow** and **JavaScript**.
- Instrumental in the development of a flexible and scalable system for managing the distribution and analysis of online polls, providing actionable insights on 10k+ clients across multiple North American financial advisory firms

Infrastructure Engineer | Canadian Imperial Bank of Commerce   *May – August 2021*

- Analyzed enterprise-wide employee datasets containing 200k+ entries using **VBA** scripting, providing concise quantitative insights and data subsets to other engineers and department leaders.

Project Developer | U of T Machine Intelligence Student Team   *September 2022 – Present*

- Developed **Natural Language Processing** models to analyze the emotional sentiments of 300k+ historical Twitter posts using **Pytorch**, applied as inputs to a deep-learning cryptocurrency price prediction model.

Projects

Multiplayer Snake Game (*Real-time online multiplayer game*)   *July 2022 – Present*

- Developed an online multiplayer version of the classic game Snake using **Python**, **JavaScript**, **HTML5**, and **CSS**.
- Designed a multithreaded **Python Websockets** server deployed on **AWS** that processes player inputs and updates the game state in less than 50ms, allowing the app to smoothly support 100+ concurrent players.

Deep Learning Movie Poster Genre Classifier (*Pytorch machine learning model*)   *January – April 2022*

- Trained a multiclassification machine learning model using **Pytorch** to identify movie posters by genre using a dataset of 12k+ poster images, achieving a classification accuracy of over 67%.

Reddit Sentiment Analysis (*Web scraping + sentiment analysis tool*)   *August – October 2022*

- Developed a tool to measure the net sentiment on specific subreddits using **Natural Language Processing** and Reddit/Pushshift **REST APIs**, linked to a **JavaScript** webapp using a **Python Websockets** server.

City Map Visualization App (*Graphical C++ app*)   *January – April 2022*

- Developed a city map visualization application using **C++** and **GTK**, allowing for dynamic search and graphical navigation of real-world locations from the OpenStreetMaps geographic world database.
- Applied Dijkstra's algorithm, simulated annealing, genetic algorithms, and multithreading to optimize pathfinding between locations (travelling salesman problem), improving route travel times by over 50% from the baseline.

Cryptocurrency Trading Bot (*Cloud-hosted Python trading bot*)   *May 2021 – Present*

- Developed and maintained a **Python** cryptocurrency trading bot deployed on **Heroku**, utilizing the Kraken cryptocurrency exchange **REST API** to trade assets in real-time using technical analysis in **NumPy**.