

NORMAN BUI

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EDUCATION

Carleton University | *Bachelor of Computer Science (Honours), 3.9/4.0 GPA*

Expected May 2025

- Software Engineering Stream; Minor in Psychology
- Awards: Deans' Honours List, President's Scholars Scholarship, Chalmers Jack Mackenzie Scholarship
- Relevant Coursework: Design & Analysis of Algorithms, Discrete Structures II, Web Apps, Operating Systems, Object-Oriented Software Engineering, Statistics, Paradigms, Human Computer interactions

EXPERIENCE

Health Canada | *Software Developer Intern - Emerging Approaches Unit*

Sep 2023 - Dec 2023

- Built random forest machine learning classifiers with pandas, NumPy, and scikit-learn to **predict chemical toxicity**
- Used SciPy to build a **data analysis pipeline** that analyzes features linked to estrogen activity
- Restored web scraping scripts for chemical data aggregation using BeautifulSoup4 and lxml, enhancing risk data search functionality by **53.33%**
- Refactored federated search system and added session management, automatic retries, and dynamic rate limiting, significantly **enhancing system maintainability and reliability**
- Developed automated workflow for extracting SRO triples from scientific articles using NLP techniques via CoreNLP and Stanza, **streamlining qualitative data extraction** into Neo4j knowledge graph
- Trained HuggingFace LLM using TensorFlow to **increase accuracy and quality** of SRO triple extraction.

Department of National Defence | *Software Developer*

June 2023 - November 2023

- Built a bilingual chatbot with Flask and GPT-3.5 to **simulate conversation with a local document database**
- Implemented an **NLP pipeline** using NLTK, focusing on tokenization and context analysis.
- Incorporated OpenAI for high-dimensional embeddings, enhancing **contextual response relevance**
- Used SQLite3 and FAISS for efficient storage and embedding retrieval, enabling **quick response times**

NAV Canada | *Software Engineer Intern - SIN Team*

May 2023 - Aug 2023

- Implemented optimized data management strategies using C++ and Qt Creator to **clear 60% of unneeded files** and **improve automated analysis solutions by 30%** in DataExtractor software
- Optimized and resolved bugs in IRIS, resulting in **more stable and efficient software performance**
- Automated network configurations using PowerShell, reducing manual efforts and increasing overall setup speed

Correctional Service Canada | *Software Developer Intern - VAM Team*

May 2022 - Apr 2023

- Collaborated on C# software solutions for web applications, **improving victim services delivery**
- Improved front-end through accessibility testing and JavaScript, HTML, and Web Experience Toolkit adjustments
- Resolved document generation errors in Dynamics 365, **reducing software downtime**

PROJECTS

SocialSaplings | *HTML/CSS, JavaScript, Node, Express, Firebase (Firestore, Auth)*

Devpost

- Led the development of a social media platform for reforestation initiatives, securing 1st place overall and winning the "Earth Challenge" prize at KuriusHacks: March Edition.
- Implemented a Tree Recommendation Tool using SoilGrids, GBIF, OpenWeatherMap, and OpenElevation APIs to **recommend optimal tree species** based on user location data.
- Used the Google Maps API to create a global tree planting visualization feature, demonstrating the collective impact of reforestation efforts.

Pomodojo | *HTML/CSS, JavaScript, Bootstrap, Node, Express, MongoDB, WebRTC*

Devpost

- Developed a study platform to facilitate productive Pomodoro sessions with gamification elements for motivation.
- Enabled real-time group video calling with WebRTC and Agora APIs, ensuring seamless, low-latency interaction.
- Used MongoDB, Node, and Express for a scalable backend, managing data persistence and session logistics.

SKILLS

Languages: Python, Java, C++, SQL, JavaScript

Frameworks: Flask, Express, Bootstrap, Web Experience Toolkit

Databases: Neo4j, MySQL, SQLite3, Firebase, MongoDB, PostgreSQL

Libraries: pandas, NumPy, matplotlib, scikit-learn, unittests, spaCy, OpenAI, Sentence Transformers, BS4, lxml