

# 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: Data Structures & Algorithms, Discrete Structures II, Web Applications, OS, Object-Oriented Software Engineering, Statistics, Paradigms, HCI, Databases

## EXPERIENCE

**Kongsberg Geospatial** | *Software Developer Intern - Solutions Engineering*

May 2024 - Aug 2024

- Developing C++ engineering solutions for TerraLens and IRIS, focusing on geographic information systems.

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

Sep 2023 - Dec 2023

- Built random forest classifiers with pandas, NumPy, SciPy, and scikit-learn to **predict chemical toxicity**.
- 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 CoreNLP and Stanza, **streamlining qualitative data extraction** into Neo4j knowledge graph.

**Department of National Defence** | *Software Developer - Internal Chatbot*

June 2023 - November 2023

- Built a LLM RAG app with Flask and GPT-3.5 to **simulate conversation with a local document database**.
- Implemented a **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 Developer Intern - Surveillance Systems*

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 - Victim Application*

May 2022 - Apr 2023

- Developed C#, JavaScript, and HTML solutions for victim info web application, improving victim services delivery.

## PROJECTS

**SocialSaplings** | *HTML/SCSS, JavaScript, Bootstrap, 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 KurioHacks: March Edition.
- Implemented a tool using **GBIF, SoilGrids, Open-Elevation, and OpenWeatherMap** to recommend optimal tree species based on a user's geodata.
- Developed a tree planting visualization tool with **Google Maps API** to showcase global reforestation impact.
- Added profiles, posts, likes, and comments, using **Firebase** for data management and authentication.

**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 & Databases:** Flask, Express, Bootstrap, WET, Neo4j, MySQL, SQLite3, Firebase, MongoDB, PostgreSQL

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

**Development Tools:** Git, Node, IBM Jazz, Ubuntu, Dynamics 365, Agile Methodology, SDLC, OOP, Qt Creator, Postman