

# 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.
- Implemented performance visualization and map rendering for LiDAR, WMTS, and S-57 for TerraLens demo.

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

Sep 2023 - Dec 2023

- Developed Python solutions for chemical assessment, leading to **improved risk data aggregation and analysis**.
- Built random forest classifiers with pandas, NumPy, SciPy, and scikit-learn to **accurately 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** with tokenization, context analysis, and named entity recognition using NLTK.
- 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

- Developed C++ solutions for various air traffic control (ATC) applications, resulting in **improved performance**.
- Implemented optimized data management strategies using C++ and Qt Creator to **achieve a 60% reduction in directory clutter** and **improve automated analysis solutions by 30%** in DataExtractor software.
- Optimized code and resolved multiple bugs in ATC software, **improving overall graphical performance by 6%**.
- Automated network configurations using PowerShell, **reducing setup time from 30 minutes to seconds**.

**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.
- Improved front-end through accessibility testing and JavaScript and WET adjustments for **over 100 users daily**.

## 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 KuriusHacks: 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.

## 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, Ubuntu, Agile Methodology, SDLC, OOP, Qt Creator, Postman