NORMAN BUI

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EDUCATION

Carleton University | *Bachelor of Computer Science (Honours), 3.9/4.0 GPA*   Expected April 2026
- Awards: Deans' Honours List, President's Scholars Scholarship, Chalmers Jack Mackenzie Scholarship
- Relevant Coursework: Data Structures & Algorithms, Discrete Math, Web Apps, Operating Systems, Object-Oriented Software Engineering, Statistics, Programming Paradigms, Human-Computer Interaction (UI/UX), Databases

EXPERIENCE

Kongsberg Geospatial | *Software Engineer Intern - C++, Qt, Python, GIS*   May 2024 - Aug 2024
- Built GIS-focused demos with C++, Qt, Git, and TerraLens SDK for ATC and defense applications.
- Implemented advanced map rendering (LiDAR, WMTS, S-57), object tracking, performance visualization (CPU, GPU, RAM), and UI enhancements for TerraLens demo, significantly boosting client satisfaction.
- Developed a proof of concept script to handle ATC software's log processing using Python scripting, **reducing processing time from days to seconds**.
- Aggregated various VFR and terrain data sources using Python scripting, **reducing processing time by 40%**.

Health Canada | *Software Developer Intern - Python, ML, ETL, Web Scraping*   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, **increasing 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 semantic triples from scientific articles using CoreNLP and Stanza, streamlining the collection and organization of qualitative data into a Neo4J knowledge graph.

Department of National Defence | *Junior Software Developer - Python, LLM, RAG*   Jun 2023 - Nov 2023
- Built a LLM RAG proof of concept 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 fast response times.

NAV Canada | *Software Engineer Intern - C++, Qt, PowerShell, GIS*   May 2023 - Aug 2023
- Developed C++ solutions for various ATC applications, resulting in improved performance and reliability.
- Implemented optimized data management strategies using C++ and Qt to achieve a **60% reduction in directory clutter** and **improve automated analysis solutions by 30%** in internal data extraction tool.
- Optimized code and resolved various 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 - HTML/CSS, JavaScript, C#*   May 2022 - Apr 2023
- Improved victim services web application through accessbility testing and bug fixes, increasing user satisfaction.

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: C/C++, Python, Java, SQL, JavaScript, PHP
Frameworks & Databases: Flask, Express, Bootstrap, WET, MySQL, SQLite3, PostgreSQL, Firebase, MongoDB, Neo4J
Libraries: pandas, NumPy, matplotlib, scikit-learn, unittests, spaCy, OpenAI, Sentence Transformers, BS4, lxml
Development Tools: Git, Node, Ubuntu, Qt Creator, Postman, Balsamiq, Agile Methodology, SDLC, OOP