

# NORMAN BUI

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## EDUCATION

- Carleton University** | *Bachelor of Computer Science (Honours), 3.9/4.0 (A) CGPA* 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, QA

## EXPERIENCE

- Junior Data Scientist** | *Public Health Agency of Canada - Python, ML, MDM, ETL* Sep 2024 - Present
- Contributing to a WHO Master Data Management system using ML for entity matching across epidemiological datasets, improving data quality and parameter extraction accuracy for global health research
- Software Engineer Intern** | *Kongsberg Geospatial - 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 with Python, **reducing processing time from days to seconds**
  - Aggregated various VFR and terrain data sources using Python scripting, **reducing processing time by 40%**
- Data Scientist Intern** | *Health Canada - Python, ML, NLP, 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
- Junior Software Developer** | *Department of National Defence - Python, LLM, RAG* Jun 2023 - Nov 2023
- Built a 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
- Software Engineer Intern** | *NAV Canada - 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**
- Junior Web Developer** | *Correctional Service Canada - C#, .NET, Web App, QA* May 2022 - Apr 2023
- Improved victim services web application through accessibility testing and bug fixes, increasing user satisfaction
  - Improved front-end through accessibility testing and fixing bugs for **over 100 users daily**

## RESEARCH & PROJECTS

- RAG Systems for Obscure Languages** | *Python, RAG, LangChain, FAISS, Sentence Transformers* [GitHub](#)
- Researched and developed RAG systems to answer obscure programming language queries @ Bedarra Corporation
- SocialSaplings** | *HTML/SCSS, JavaScript, Bootstrap, Node, Express, Firebase (Firestore, Auth)* [Devpost](#)
- Led the development of a reforestation web platform, securing **1st place overall** at KuriosHacks: March Edition.
  - Implemented a tool using various APIs 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:** HTML/CSS, C/C++, C#, Python, Java, SQL, JavaScript, PHP  
**Frameworks & Databases:** Flask, Express, Bootstrap, WET, MySQL, SQLite3, PostgreSQL, Firebase, MongoDB, Neo4J, .NET  
**Libraries:** pandas, NumPy, matplotlib, scikit-learn, unittests, spaCy, OpenAI, Sentence Transformers, BS4, lxml, Selenium  
**Development Tools:** Git, Node, Ubuntu, Qt Creator, Postman, Balsamiq, Agile Methodology, SDLC, OOP