

NORMAN BUI

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EDUCATION

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

Expected April 2026

- Coursework: DSA, Discrete Math & Structures, OS, OOP, Paradigms, WebDev, QA, HCI (UI/UX), DBMS, Statistical Modeling

EXPERIENCE

Electronic Arts (EA) | *Software Developer Intern* | *AI Agents, Test Automation*

May 2025 - Present

- Developing an AI agent-powered testing tool for a new Sims title, enabling QA to run tests via natural language, with agents that autonomously explore game systems and detect bugs

Autodesk | *Software Developer Intern* | *TypeScript, Java, GraphQL*

Jan 2025 - Apr 2025

- Worked on Quicksilver, a major project for Autodesk's cloud-based CAD/CAM platform, Fusion
- Architected and implemented a data validation framework, establishing the foundation for all future missing data fixes while creating comprehensive documentation
- Developed an **O(n)** algorithm with intelligent concurrency controls to repair missing primary relationships, achieving **8x** throughput through optimized parallel processing
- Designed and deployed API endpoint integration with manufacturing workflows to automate validation and repair operations when detecting missing data, reducing production failures by proactively addressing data issues without manual intervention
- Implemented permission validation and error handling protocols, eliminating existing security vulnerabilities for sensitive data
- Refactored part number assignment system to handle various edge cases, support configuration-specific assignments, and maintain data persistence during status changes, improving flexibility for users and reducing errors
- Maintained **100% test coverage** across all code changes using Mocha, Chai, and Sinon, ensuring high code quality standards

Public Health Agency of Canada | *Data Scientist Intern* | *Python, LLM, MDM*

Sep 2024 - Dec 2024

- Developed LLM-powered workflow for epidemiological literature reviews with Imperial College London and the World Health Organization as part of a MDM system to enable standardized research access for global health initiatives
- Conducted comprehensive embedding model evaluation using Ollama to validate existing RAG system performance, confirming optimal configuration and establishing baseline metrics for future improvements
- Researched techniques for academic paper collection using GPT-4o, developing proof-of-concept for scalable PDF retrieval

Kongsberg Geospatial | *Software Developer Intern* | *C++, Qt, Python, GIS*

May 2024 - Aug 2024

- Developed demo apps using TerraLens SDK as the sole developer on the Solutions Engineering team, successfully delivering custom solutions to major clients in aviation, defense, and government sectors
- Integrated LiDAR, WMTS, and S-57 data and optimized render pipeline to achieve **consistent 60+ FPS** with real-time object tracking, while implementing system monitoring (GPU, CPU, RAM) and modernizing Qt UI/UX
- Developed automated airspace classification framework, removing manual processing and standardizing data categorization
- Automated VFR and terrain data processing workflows, reducing aggregating time by more than **40%**

Health Canada | *Data Scientist Intern* | *Python, ML, NLP, ETL*

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
- Rebuilt organization-wide federated chemical search system using BeautifulSoup4 and lxml, implementing automated fault tolerance and rate limiting that increased query success rate by **20%**
- Architected scalable web scraping framework and implemented test-driven development practices using unittest framework, restoring chemical data source integration capability **by 113%** and achieving **100% test coverage**
- Engineered automated knowledge graph pipeline using Neo4j, CoreNLP, and Stanza to extract semantic triples from medical literature, reducing qualitative data processing time and work

Department of National Defence | *Software Developer Intern* | *Python, LLM, RAG*

Jun 2023 - Nov 2023

- Built chatbot, implementing RAG architecture to enable intelligent querying across **20+ tax documents**
- Developed NLP pipeline using NLTK, integrating tokenization, contextual analysis, and NER to enhance text understanding and information extraction accuracy
- Architected vector search system using FAISS and SQLite3, optimizing embedding storage and retrieval for queries

NAV CANADA | *Software Developer Intern* | *C++, Qt, PowerShell, GIS*

May 2023 - Aug 2023

- Developed C++ solutions for various ATC applications, resulting in improved performance and reliability
- Optimized data management algorithm for internal data tool, resulting in a **60% decrease** in storage utilization and **30% boost** in automated data analysis performance
- Resolved multiple bugs in ATC software, achieving an overall **improvement of 16%** in frame rate
- Automated network configurations with PowerShell, reducing manual work and setup time by **more than 95%**

Correctional Service Canada | *Software Developer Intern* | *C#, .NET, Web Development, QA*

May 2022 - Apr 2023

- Improved web accessibility using the WET framework to ensure WCAG 2.1 Level AA compliance, enhancing UX for **100+ daily users** in victim services application

SKILLS

Languages: C/C++, Python, Java, C#, SQL, HTML/CSS, JavaScript, PHP, Gherkin | English, French, Vietnamese

Frameworks & Databases: Flask, Spring Boot, Express.js, MySQL, SQLite3, PostgreSQL, Firebase, MongoDB, Neo4j, JUnit, Selenium

Libraries: pandas, NumPy, matplotlib, scikit-learn, unittest, spaCy, Sentence Transformers, BS4, lxml, HuggingFace

Development Tools: Git, Node.js, Ubuntu, Qt Creator, Postman, Agile Methodology, SDLC, OOP, TDD, Cucumber