NORMAN BUI

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EDUCATION

Carleton University | *Bachelor of Computer Science (Honours), 3.9/4.0 (A) GPA*   Expected April 2026
- Relevant Coursework: Data Structures & Algorithms, Discrete Math and Structures, OS, OOP, Paradigms, Web Development, QA, HCI (UI/UX), Database Management Systems, Statistical Modeling, Calculus, Linear Algebra

EXPERIENCE

Autodesk | *Incoming Software Developer Intern* | *Java, TypeScript, GraphQL*   Jan 2025
- Will be working on cloud-based CAD/CAM development for Autodesk's Fusion platform **(Winter 2025)**

Public Health Agency of Canada | *Junior Data Scientist* | *Python, LLM, MDM*   Sep 2024 - Present
- Developing LLM-powered workflow for epidemiological literature reviews with Imperial College London and WHO as part of master data management system to enable standardized research access for global health initiatives

Kongsberg Geospatial | *Software Engineer Intern* | *C++, Qt, Python, GIS*   May 2024 - Aug 2024
- Pioneered establishment of Solutions Engineering team as a founding software engineer, developing demos using TerraLens SDK, resulting in successful solution delivery to various major aviation, defence, and government clients
- 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 for North American and Australian regions, 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 API templates 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 | *Junior AI/ML Engineer* | *Python, LLM, RAG*   Jun 2023 - Nov 2023
- Built conversational AI system using GPT-3.5 and Flask, 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 Engineer 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 | *Junior Web Developer* | *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

PROJECTS

Obscure Coding Language RAG Systems | *Python, RAG, LangChain, FAISS, Sentence Transformers*   ⓘ
- Researched and developed RAG systems to answer obscure programming language queries **@ Bedarra Corporation**

SocialSaplings | *HTML/SCSS, JavaScript, Bootstrap, Node.js, Express.js, Firebase (Firestore, Auth)*   ⓓ
- Led cross-functional team to build a reforestation platform, resulting in **1st place @ KuriusHacks** out of 15 teams
- Built tree species recommendation algorithm integrating various APIs to analyze user geodata for optimal planting
- Developed an interactive visualization dashboard using the Google Maps API to display real-time reforestation metrics and global environmental impact data

Pomodojo | *HTML/CSS, JavaScript, Bootstrap, Node.js, Express.js, MongoDB, WebRTC*   ⓓ
- Designed a study platform to facilitate productive Pomodoro sessions with gamification elements for motivation **@ uOttaHack6**
- Integrated WebRTC and Agora APIs to enable multi-user video conferencing capabilities, ensuring stable real-time communication for up to 10 concurrent users with **sub-100ms latency**
- Developed MongoDB database architecture and RESTful APIs to manage user sessions, study metrics, and platform functionality

SKILLS

Languages: C/C++, Python, Java, C#, SQL, HTML/CSS, JavaScript, PHP | English, French, Vietnamese
Frameworks & Databases: Flask, 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