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, Discrete Structures, Operating Systems, OOP, Paradigms, Web Development, Quality Assurance, HCI (UI/UX), Database Management Systems, Statistical Modeling, Linear Algebra, Calculus

EXPERIENCE

Autodesk | *Incoming Software Developer Intern* | *Java, TypeScript, GraphQL* Jan 2025 - Apr 2025

- Will be working on cloud-based CAD/CAM development for Autodesk's Fusion platform

Public Health Agency of Canada | *Junior Data Scientist* | *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 how to automate academic paper collection using GPT-4o, developing proof-of-concept for scalable PDF retrieval workflow

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, 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%**

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, 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