

Muhammad Muzammil

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SKILLS

Programming: Proficient (3+ yrs): Python, C++, JavaScript; Intermediate (1-2 yrs): TypeScript, C#, Java, SQL, PowerShell, GLSL

Technologies: PyTorch, RAG/LangChain, AWS, React, Next.js, FastAPI, VMWare, Django, Node.js, PostgreSQL, Supabase, Git/GitHub, PowerBI, Factory Talk Suite, Wireshark, Qt, Unity3D, Unreal Engine, Blender, Three.js, Pandas, NumPy, Tableau

EDUCATION

University of Calgary

Bachelor of Science in Computer Science

Calgary, AB

Expected Graduation: June 2027

- Dean's List: 2022, 2023

- Relevant coursework: Data Structures & Algorithms, Operating Systems, Natural Language Processing, Machine Learning, Database Management, Software Engineering, Web Development

EXPERIENCE

Software Engineering Intern

Cenovus Energy

May 2025 – Present

Calgary, AB

- Automated sensor data processing with **Python** and **PowerShell** scripts, eliminating **200+ hours** of quarterly manual work and saving **\$40k annually** in labor costs
- Diagnosed critical PLC communication failures using **Wireshark packet analysis**, resolving OPC UA/DA session drops and data synchronization issues that restored **99%+ uptime** across **50+ field devices**
- Built SQL queries and PowerBI dashboards analyzing **100k+ sensor readings**, enabling predictive maintenance that reduced equipment failures by 20%
- Developed APIs for pulling PSI data and auto-generating analysis, integrating real-time process control data with business intelligence platforms like PowerBI
- Designed and implemented tools for bulk tag updates and automated configuration backups, streamlining system migrations across **15+ industrial control systems**
- Modernized plant HMI (Human-Machine Interface) screens using HTML and VB scripting to improve operational efficiency and user experience for process control operators

Full-Stack Engineer

Thinkera

July 2025 – Present

Calgary, AB

- Designed end-to-end **FastAPI-based** intelligence platform for teams and individuals with **agentic architecture** and multi-agent orchestration
- Architected parallel research orchestration system conducting multiple simultaneous API queries with **RAG pipelines** and vector search capabilities
- Implemented comprehensive **relational database schema with proper foreign key relationships** using PostgreSQL and Supabase
- Built **knowledge graph querying tools** and developed systems for extracting insights from complex data relationships

Software Engineer

UofC Solar Car

Oct 2022 – May 2025

Calgary, AB

- Developed **3,000+ lines of C++ and QML** for real-time telemetry dashboard, displaying 20+ vehicle metrics with **sub-100ms update latency** during competition testing
- Migrated development environment to Linux virtual machines, eliminating cross-platform compatibility issues affecting 8-person team
- Implemented CAN bus data parser processing **1k+ messages/sec**, enabling real-time driver feedback during 1000km+ race competition
- Built custom data visualization components with Qt Charts, creating real-time graphs for battery voltage, motor temperature, and energy consumption metrics
- Coordinated with electrical and mechanical sub-teams using **Jira and Agile methodologies**, ensuring seamless integration of telemetry system with vehicle hardware

PROJECTS

Last Stop Published Game, ~50 hours C#, GLSL, Unity3D, Blender	muzmil.itch.io/last-stop
<ul style="list-style-type: none">Shipped PS2-style horror game in 7-day game jam, achieving 6k+ downloads and 15k+ impressions with 4.5/5 ratingImplemented custom GLSL shaders for retro CRT effects, maintaining stable 60 FPS across 15+ environmentsDesigned 15+ low-poly 3D models in Blender and built procedural sound system with spatial audio	
Note to Self Published Game, ~40 hours C#, Unity3D, Blender	muzmil.itch.io/note-to-self
<ul style="list-style-type: none">Developed PSX-style indie horror game in 10-day game jam, achieving 200+ downloads with positive ratingsCreated atmospheric environments with low-poly art style and implemented dynamic lighting systemDesigned engaging puzzle mechanics and narrative elements that received strong player feedback	
Automated Stock Signals Personal Project, ~40 hours Python, Pandas, NumPy	github.com/muzman123/stockssignals
<ul style="list-style-type: none">Built Python pattern scanner analyzing 500+ stocks daily with pandas/NumPy, achieving 75% accuracy on breakout patternsAutomated email alerts via SMTP delivering CSV reports with patterns, targets, and TradingView URLs to 50+ usersImplemented double-top detection algorithm identifying bearish reversal patterns across 250+ stocks	
RateXpose Startup Project, ~80 hours TypeScript, Next.js, Supabase, Vercel	ratexpose.ca
<ul style="list-style-type: none">Built full-stack price transparency platform with Next.js/TypeScript/Supabase, acquiring 200+ waitlist signups in first monthEngineered anonymous submission system with server-side validation, processing 500+ verified entries across 10 categoriesImplemented OAuth authentication and role-based access control enabling moderation while maintaining user privacy	
Music Cluster Visualization ML Project, ~30 hours Python, PyTorch, Vite	github.com/muzman123/music-cluster
<ul style="list-style-type: none">Developed interactive web application visualizing music clustering using deep learning model with 90%+ accuracyImplemented PyTorch-based neural network for audio feature extraction and classificationCreated dynamic visualization interface with Vite for real-time cluster exploration	
Globe News Web Application, ~25 hours React, JavaScript, Three.js	github.com/muzman123/globe-news
<ul style="list-style-type: none">Built web application combining 3D visualization with real-time news aggregation webscraped from Google NewsImplemented interactive Three.js 3D Earth model allowing users to explore global news geographicallyDesigned responsive user interface with React for seamless news browsing experience	

ACHIEVEMENTS / ACTIVITIES

Runner-Up, AWS & Keyera Tech Case Competition 2nd out of 30+ teams	Mar 2025
Technical Blog Write articles on ML, deep learning, and AI engineering at muzman123.github.io/blog	2024 – Present
Headstarter AI Fellowship Built 5 AI projects, final project acquired 1,000+ users	July 2024 – Sept 2024
Alberta Health Hackathon Developed MyBuddy app vetted by Alberta Health Services professionals	July 2024