Alexander King Perocho

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Education

Western University. **Sep 2023 — Expected Apr 2026**
B.Sc Computer Science — Software Engineering. London, Ontario

Coursework: Data Structures & Algorithms, Object-Oriented Design & Analysis, Databases I, Software Project Management, Intro to Software Engineering, Software Tools & Systems Programming, Operating Systems, Computer Architecture & Organization, IBM Z Xplore (Master the Mainframe).
Certifications: AWS Cloud, IBM Systems (Intermediate), IBM Systems (Advanced)

Skills

Languages: C++, C#, Java, Python, Shell Scripting, Bash, SQL, JavaScript, HTML, CSS.
Tools & Technologies: MERN, .NET Core, AWS Cloud, Linux, Docker, Github Actions, Git.
Concepts & Frameworks: OOP, CI/CD, SOLID, ACID, Agile, Scrum, Waterfall, SDLC, MVC.

Experience

Open Source Contributor (Mentorship) **Apr 2025 — Present**
zDevOps Remote

- **Utilizing: Python, Pandas, Linux, Shell Scripting, Github Actions, Git.**
- Developing data parsers for **2+** mainframe datasets; enabling users to convert system records into Pandas DataFrames for analysis.
- Building and maintaining automated testing suites using pytest; improving code reliability and making onboarding easier.
- Implementing CI/CD pipelines via GitHub Actions; automating linting, testing, and validation across all PR's.

Projects

Chess Engine

- **Utilized: C++, OOP, SOLID, Design Patterns, CMake, Git.**
- Created a UCI-compliant chess engine in modern C++ leveraging Object Oriented Design; emphasized adherence to SOLID design principles; applied Singleton, Strategy and State design patterns; wrote clean C++ built to last through industry standards.
- Designed a 64-bit bitboard system with custom bitwise operators; enabled constant-time move generation and caching of evaluations; improved search, position-evaluation, and memory efficiency.
- Applied a heuristic evaluation function with compact data structures and inline functions; reduced position analysis compute times.

Vehicle Telemetry Microservice

- **Utilized: C#, .NET Core, gRPC, Posgres SQL, Git.**
- Built a gRPC Telemetry Microservice on .NET Core for ingesting and analyzing OBD-II and GPS data transmitted from vehicles.
- Persisted structured time-series data to PostgreSQL with TimescaleDB hypertables, enabling efficient write throughput, retention policies, and time-based aggregation for large-scale telemetry data.
- Designed a REST API layer alongside gRPC to expose filtered endpoints (e.g., latest position, time-bucketed aggregates).

AI/LLM-Powered Geo-Spatial Search Tool

- **Utilized: Node.js, Express.js, React.js, OpenAI, OpenStreetMap, Git.**
- Delivered an application with Node, Express, and React that used AI to convert plain English into a Query-Language (QL) to display geo-referenced data on an interactive map.
- Applied instruction priming to control AI responses and generate/retrieve valid Overpass QL queries without extraneous output.
- Integrated OpenAI and OpenStreetMap APIs with RESTful GET and POST endpoints; ensured seamless data flow from user input to map visualization; verified functionality with Postman.

Visual Programming Language

- **Utilized: Java, Swing, OOP, JSON, MVC, Jira, Confluence, Git.**
- Led an Agile development team as Scrum Master to create a block-based programming language in Java/Swing that introduced beginner coders to programming concepts through visual intuition.
- Implemented MVC architecture and Object Oriented Design to represent code with drag-and-drop blocks.
- Assigned and maintained tasks with Jira; authored requirements documentations with confluence; applied continuous unit-testing throughout development; coordinated Agile workflows and Sprints, ensuring application stability.