Muhammad Zain

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EDUCATION

**University of Calgary** Sep 2022 – May 2027

Bachelors of Science in Software Engineering

Relevant Coursework: Data Structures & Algorithms | Object-Oriented Design and Programming | Software Testing | Full Stack Web Development | Database Systems and SQL | Machine Learning | Cloud Computing | Agile Software Development

PROJECTS

CityX Subway Display System 🔗

Java, MySQL, APIs, Swing, JLayer, Multi-threading
- Developed a real-time subway display system with train tracking, ad rotations, and live weather/news updates.
- Built a modular GUI using Swing's CardLayout and Timer for 10-second ad-to-map transitions.
- Utilized MySQL for scheduled, relevance-based ad rotations to optimize data retrieval.
- Integrated wttr.in 🔗 API for continuous updates, ensuring current weather/news for commuters.
- Configured JLayer for station audio announcements, enhancing accessibility.

Purrfect Innovations 🔗

HTML, CSS, JavaScript, React, Flask, Node.js
- Created a full-stack e-commerce platform with cart, authentication, and 10 product listings, achieving a 95% Lighthouse score.
- Developed a RESTful Flask API for backend support, handling 50 concurrent sessions with a 150 ms response time.
- Built modular React components, reducing Time to Interactive (TTI) by 30%.
- Established routing across 3 endpoints for efficient data exchange.

Flight Operations Manager 🔗

C++ Classes, Machine Learning, Vectors
- Designed an airline management system in C++, optimizing passenger, flight, and seating operations.
- Reduced database query time by 40%, enabling faster record retrieval from a 500+ dataset.
- Ensured 99.9% system uptime by identifying and resolving 3 critical segmentation faults.

Art Museum Data Manager 🔗

Python, MySQL, SQL Scripting
- Engineered a MySQL database with a Python interface for managing art collections and role-based access.
- Implemented credential-based roles (admin, employee) via Python for secure access control.
- Automated database setup with SQL scripts, reducing manual workload by 50%.
- Enhanced data security using trigger-based SQL constraints, preventing unauthorized modifications.

TECHNICAL SKILLS

Programming Languages: C++, Java, Python, SQL

Web Development: React.js (Hooks, Redux), Flask, Node.js (Express), HTML, CSS, JavaScript (ES6+)

Databases: MySQL, PostgreSQL, MongoDB (Query Optimization, ER Modeling)

Testing & Automation: JUnit, Selenium, Postman (API Testing)

Version Control & CI/CD: Git, GitHub Actions, Bitbucket, Sourcetree, Docker

Cloud & DevOps: AWS (EC2, S3, Lambda), Firebase, Heroku

WORK EXPERIENCE

Best Buy Canada May 2023 – Sep 2024 | Calgary, Canada

Mobile and Smart Living Advisor
- Boosted customer retention by 20% by delivering tailored smart home solutions based on consumer needs.
- Achieved $70,000+ in monthly sales through effective upselling & solution-based selling strategies.
- Ranked #2 in team performance, closing 55+ activations monthly with major telecom providers (Telus, Bell, Rogers).
- Reduced product return rate by 15% by educating customers on device compatibility & optimal usage.

LEADERSHIP

AKHSS Science & Commerce Olympiad Nov 2019

Project Lead
- Led the **Laser Li-Fi (Light-Fidelity)** project, demonstrating high-speed data transfer via light waves and earning third place in the Physics category.