Muhammad Khan

Toronto, ON
647-395-5830 muhammad354621@gmail.com github.com/Khan-Muhammad1

Education

York University **Graduated May 2025**
Bachelor of Engineering in Computer Engineering *Toronto, Ontario*

- Relevant Coursework: Intro to Database Systems, Object Oriented Programming, Software Engineering Requirements, Engineering Project(Capstone), Communication Networks
- Certifications: Google Data Analytics Professional Certificate (in progress)

Skills

Languages: Python, SQL, Java, JavaScript, C++
Tools/Technologies: Jira, Pandas, Power BI, Git, YOLOv8, AWS, Linux
Soft Skills: Critical Thinking, Communication, Teamwork, Adaptability, Problem-Solving, Continuous Learning, Initiative
Concepts/Methodologies: Agile & Waterfall, Test-Driven Development, Software Development Life Cycle, Sprint Planning

Technical Experience

Live Cryptocurrency Analytics Dashboard | *Python, Pandas, Power BI* **January 2025 - May 2025**

- Designed and implemented real-time dashboards to analyze cryptocurrency trends, processing 30 days of price data using Python and Pandas for data cleaning and transformation.
- Visualized price trends, daily percent changes, and coin comparisons in Power BI, enabling actionable insights for market analysis.
- Automated data retrieval with CoinGecko API, optimizing data pipeline efficiency for real-time updates.

Automated Drone Pole Inspection – Capstone Project with Alectra Utilities **September 2023 - May 2024**

- Developed and validated an AI-powered pole inspection system aimed at improving accuracy and reducing inspection errors.
- Collaborated with Alectra Utilities through weekly meetings to define requirements, and deliverables, and coordinate testing strategies.
- Conducted functional testing of YOLOv8-based object detection, validating precise pole identification across diverse lighting and background scenarios.
- Executed functional and manual testing of drone path planning, ensuring accurate and reliable drone routing performance.
- Utilized Jira to assign and track team tasks and bugs, ensuring clear responsibility, timely progress, and effective issue resolution.
- Followed Agile methodology with weekly stakeholder meetings and Jira-based sprint planning to ensure iterative development and timely delivery.

3D Ray Tracer | *C, C++* **September 2024 - January 2025**

- Built and tested a 3D ray tracer capable of simulating lighting, reflection, and shadow effects.
- Designed and implemented ray-sphere intersection and illumination algorithms.
- Developed test cases to validate visual correctness and system performance.
- Debugged and optimized core rendering logic, showcasing software testing, debugging, and validation skills.

YouTube Bookmark Extension | *JavaScript, YouTube API, Chrome API* **September 2022 - January 2023**

- Built a Chrome extension for timestamped bookmarking on YouTube, enhancing user engagement and accuracy of saved states.
- Integrated with YouTube and Chrome APIs, conducting functional testing to ensure cross-browser compatibility.
- Debugged JavaScript issues and implemented test-driven improvements to stabilize performance under varying usage conditions.
- Conducted user testing with 5+ participants, improving functionality based on feedback.

Automated Plant-Watering System | *C++, MATLAB, Arduino* **September 2021 - January 2022**

- Programmed an Arduino Uno using C++ to build an automated plant-watering system, demonstrating embedded systems testing and real-time monitoring.
- Reduced system failure by 20% through iterative design improvements and testing under different soil and moisture conditions.
- Collaborated in weekly review sessions to gather feedback, validate system behavior, and implement optimizations.