Khizar Malik

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EDUCATION

Carleton University   2026 (Expected)
Computer Science: Artificial Intelligence and AI Stream   *Ottawa*
- **Relevant Courses:** Data Structures and Algorithms, Software Engineering, Object Oriented Software Engineering, Discrete Structures I/II, Fundamentals of Web Applications

TECHNICAL SKILLS

Languages: C++, Python, Java, JavaScript, SQL
Technologies: Qt Framework, React, Node.js, OpenCV, REST APIs
Tools & Practices: Git, Design Patterns, SOLID Principles, Agile/Scrum, GDB, Valgrind

PROJECTS

Medical Device Simulation Application — Team of 4
- Contributed to a Qt/C++ medical device simulator implementing the Facade design pattern to simplify complex subsystem interactions between UI, device control, and data management layers
- Collaborated in an Agile team environment using Git for version control, participating in code reviews and maintaining documentation while delivering features across biweekly sprints
- Implemented key components using Observer and Singleton patterns for real-time health metrics visualization, integrating 24+ measurement points with an intuitive user interface

Elevator Control System
- Designed and implemented State and Command patterns to manage elevator operations, creating a scalable system for handling concurrent passenger requests and floor operations
- Developed a responsive GUI using Qt's signal/slot architecture, implementing the Observer pattern for real-time updates of elevator states and passenger interactions
- Integrated safety features using Strategy pattern for different emergency scenarios, ensuring robust error handling and failsafe mechanisms

2D Game Simulation
- Developed a C++ game engine utilizing Factory and Strategy patterns for character creation and behavior management, following SOLID principles for maintainable and extensible code
- Implemented a component-based architecture supporting 5+ different character types through polymorphism and inheritance, ensuring clean separation of concerns
- Applied Test-Driven Development with GDB and Valgrind for robust memory management, achieving zero memory leaks in the final implementation

EXPERIENCE

Client Service Representative   Aug 2024 – Present
Carleton Residence Services   *Ottawa, ON*
- Leveraged **EQ** to stay calm and composed during challenging interactions, helping to de-escalate situations and provide clear solutions to 500+ distressed students
- Used **quick thinking** to efficiently assess and prioritize student needs, directing them to the appropriate departments, enhancing the move-in experience for all students
- **Collaborated** with 5+ team members and coordinated with departments to resolve complex issues, showcasing my ability to work in a team and provide personalized solutions to student problems

AWARDS AND CERTIFICATIONS

Award of Academic Excellence for International Students   Sep 2022 - Apr 2023
Batch of 2022   *Carleton University*
- Got selected for the award, a prestigious honor bestowed annually to only 3 individuals out of 1000+ of applicants