Harmanjot Malhi

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EDUCATION

Honours Bachelor of Science, Computer Science (Software Engineering Concentration) September 2021 – Present
Brock University, St. Catharines, ON

- Expected Graduation: December 2025
- Coursework: Computer Networks, Advance Data Structures, Computer Systems, Algorithms
- GPA: 3.7/4.0
- Scholarships & Awards: Brock Entrance Scholars Award, Dean's Honour List Year 1, 2, 3

TECHNICAL SKILLS

Languages: Java, C++, Python, Assembly, HTML/CSS, JavaScript
Frameworks & Databases: React, Express, Socket.io, JUnit, RESTful, PostgreSQL, MySQL, Firebase
Technologies: NodeJS, Android, Docker, Git/GitHub, Bash, Java Servlets, Excel, Jira, SDLC, WordPress

EXPERIENCE

Research Assistant January 2024 – December 2024
Brock University

- Conducted advanced research in Distributed Simulations using the High-Level Architecture (HLA) framework, gaining expertise in real-time synchronization and interoperability.
- Developed a Lunar Rover Federate within a distributed simulation environment, achieving real-time interaction and position updates with an accuracy of ±0.5 meters in a simulated lunar landscape, improving positional fidelity by 40%.
- Utilized Pitch RTI and SEE kits for federation design, object modeling, and time management, reducing simulation latency by 20% and increasing object update rates by 35%, demonstrating proficiency in advanced distributed simulation tools and technologies.
- Presented research findings at the Brock Eclipse Event 2024, effectively communicating complex simulation concepts to an audience of over 200 industry experts and academics, showcasing practical applications of distributed systems in aerospace.

PROJECTS

Event Management App April 2025
[React, Node.js, Express.js, Firebase]

- Served as the Scrum Master and Backend Developer, facilitating agile ceremonies and improving sprint efficiency by 40% and reducing project delivery time 20%. Successfully contributed to development efforts and improved team productivity.
- Designed and developed a scalable platform using React, CSS for the frontend and Node.js, Express.js, and Firebase for backend. Integrated real time ticketing availability, secure payment processing, and authentication, reducing checkout failure by 10%.
- Implemented data analytics dashboards as a pro feature to provide insights to organizer on ticket sales, and event performance. Developed API access for pro users allowing seamless integration with third-party tools and automation workflows.

Traffic Simulator OOPS April 2024
[Java, MVC, UDP, Object-Orient Programming]

- Architected UML diagrams for a complex game, leveraging advanced object-oriented programming principles to create an efficient and comprehensive system architecture
- Developed game logic, rules, and user interaction mechanisms by integrating advanced Java features such as wildcards, generics, lambda expressions, I/O, and utility classes, resulting in a top-tier implementation within the class.
- Revamped project to utilize a multi-threaded client-server model with UDP protocol for packet sharing, supporting multiple players, resulting in a 40% reduction in latency and smoother game performance.

Android Application Project December 2024
[Android, Java, Retrofit, Networking]

- Developed "Recipica," an Android application integrated with the Spoonacular API that fetches and displays over 500+ curated recipes complete with detailed instructions, ingredient lists, and similar recipe suggestions.
- Engineered dynamic UI components, including Recycler View with custom adapters, SearchView, and Spinner—that smoothly render 100+ recipe items per session and reduced data and image load times by approximately 30% using the Picasso library.
- Leveraged third party libraries like Picasso for efficient image loading and caching, and developed 7 custom adapters (e.g., for recipe listing and detailed ingredient views) to create modular and maintainable UI components.