Mohan Grewal

British Columbia, Canada ✉ mohangrewal24@gmail.com ☐ 778-858-8014 ▪ in/mohan-grewal ☁ mohangrewalcareer.vercel.app/

EXPERIENCE

Software Engineer Intern | Android Studio, Xcode, Kotlin, Swift, Linux
Rivian   **January 2023 – August 2023, Vancouver, BC**
· Improved developer **QA efficiency** by identifying and resolving mobile app issues in **Kotlin** and **Swift**, reducing **bug resolution time** for customer-facing apps.
· Engineered a **debug menu** enabling QA testers to automatically create **JIRA tickets** from the app, streamlining **bug reporting**.
· Developed an **automated testing suite** using **Python**, accelerating **code testing and feature deployment**.

Software Engineer Intern | Unity C#
East Side Games   **September 2020 – April 2021, Vancouver, BC**
· Designed and implemented a weekly **subscription service prototype** using **Unity IAPs** for Android and iOS.
· Built a **visual debugging menu** to enable employees to quickly troubleshoot **subscription service issues**.
· Collaborated in an **agile team** with sprints and daily stand-ups to enhance **project organization** and **development efficiency**.

PROJECT

Spotify Smart Queue Manager | Electron, React, TypeScript, JavaScript, Node.js, Spotify Web API
Personal · github.com/mohangrewal101/Spotify-Smart-Queue-Manager · August 2025 – January 2026
· Developed an Electron **desktop widget** enabling real-time **Spotify queue management** without switching applications.
· Integrated **Spotify Web API** and implemented **custom queue reordering** and **removal logic** to overcome API constraints.
· Designed **IPC-based state synchronization** between **backend services** and **frontend UI**.

Career Website | Next.js, Typescript, React, Tailwind CSS
Personal · github.com/mohangrewal101/Career-Website · June 2025 – July 2025
· Designed and deployed a **responsive portfolio website** showcasing technical projects and experience.
· Automated synchronization of **project data from GitHub** to maintain up-to-date content.
· Built **interactive UI components** using **React** and **TypeScript**.

AI Workout Plan | FastAPI, Python, React, JavaScript, Tailwind CSS, scikit-learn
Personal · github.com/mohangrewal101/Workout-AI-Planner · April 2025 – June 2025
· Built and deployed a **full-stack AI-powered workout planner** generating personalized routines based on user input.
· Trained a **logistic regression model** to rank and filter **40+ fitness tips** by **muscle group focus**.
· Designed **RESTful APIs** using **FastAPI** and deployed **backend and frontend services** to production.

Path-Reachability | IntelliJ, TypeScript, Javascript, Z3
Academic · github.com/mohangrewal101/Path-Reachability · March 2024 – April 2024
· Developed a **static analysis tool** to enumerate all feasible execution paths in **TypeScript programs**.
· Modeled **program constraints** and translated them into **Z3 solver inputs** for **satisfiability analysis**.
· Identified **unreachable and conflicting execution paths** to surface hidden **logic bugs**.

Panic Titanic | Unity, C#, Photon Networking
Personal · github.com/2020-21-UBC-Game-Dev-Team-3/team3-game · September 2020 – March 2021
· Developed a real-time **3D multiplayer game** using **Unity** and **Photon Networking** in a team of 10.
· Implemented **RPC-based state synchronization** for consistent **multiplayer gameplay**.
· Designed and integrated a **player voting system** using **C# enums** and **Photon callbacks**.

AI Demo Test | Unreal Engine, C++, Blueprint
Personal · github.com/mohangrewal101/ThirdPersonCombat · July 2021 – September 2022
· Built an **AI-driven third-person combat prototype** using **Unreal Engine 4** with **C++** and **Blueprints**.
· Implemented **5 distinct AI states** with **collider-based transitions** for dynamic **behavior adjustments**.
· Organized **gameplay logic** across **Blueprint** and **C++** for performance and maintainability.

EDUCATION

Bachelor of Science in Computer Science
University of British Columbia · Vancouver, BC · 2024

SKILLS

Languages: Java, JavaScript, TypeScript, Kotlin, Swift, Python, C#, C, C++
Frameworks / Libraries: FastAPI, React, Tailwind CSS, Hugging Face, ANTLR, Z3, Aubio
Tools / Platforms: GitHub, GitLab, Android Studio, Xcode, IntelliJ, Unity, Unreal Engine, JIRA, Render, Vercel
Technologies / APIs: REST APIs, Inter-Process Communication (IPC), Event-Driven Architecture, Signal Processing
AI / ML: NLP, Transformer Models, Prompt Engineering
Cloud / DevOps: CI/CD, Deployment Pipelines, Environment Variables
Testing / QA: Unit Testing, Automated Testing, Debugging, Test-Driven Development
Networking / Multiplayer: RPC, Client-Server Architecture, Real-Time Synchronization, Latency Optimization
General Concepts: Linux, Operating Systems, Data Structures & Algorithms, Complexity Analysis, Multithreading, Game AI, Agile Development