

# Ekansh Chawla - Agile Software Developer

Portfolio Website | Github | Email | 7789904365 | LinkedIn | Hackaday | Vancouver, BC

## TECHNICAL SKILLS

**Programming Languages & Frameworks:** Rails, Django, TensorFlow, Haskell, Rust, Java, Flask, JavaScript, C++  
**Web & Mobile Development:** React, Angular, Expo, REST APIs, TypeScript, HTML5, CSS3, ASP.NET MVC, .NET Core  
**Tools & Databases:** Jenkins, JIRA, Azure, AWS, Docker, Git, GitHub, Maven, MySQL, SQLite  
**Networking & IoT:** MQTT, TCP/IP, IoT, Raspberry Pi  
**Game Development:** Unity (C#), Mirror Networking (Unity), Photon PUN, WebSockets

## EXPERIENCE

### Compiler Engineer

December 2024 – April 2025

*OpenQQuantify*

*Remote*

- Developed GCC passes for RISC-V, improving instruction scheduling and code generation for custom hardware.
- Built AI-driven software tools for embedded systems, utilizing vertex-based modeling to guide hardware-software integration.
- Integrated RF data into Digital Twin simulation frameworks, improving system prototyping and testing.

### Backend Developer

September 2024 – December 2024

*Horizon Expedition - Part Time*

*Vancouver, Canada*

- Synchronized NPC behavior across clients using Mirror, reducing lag and improving player experience by 25%.
- Configured REST APIs for inventory transactions and player progression, improving database query performance by 40%.
- Integrated a combat system and player progression mechanics, achieving 20% more efficient server-client synchronization.

### Frontend Developer

April 2024 – August 2024

*CJSF*

*Vancouver, Canada*

- Developed responsive user interfaces, leveraging Drupal's theming layer and PHP to create dynamic, user-friendly pages.
- Increased user engagement by 30% by optimizing navigation, enhancing accessibility, and improving UI/UX consistency.
- Refactored backend PHP code and optimized database queries and data retrieval, reducing server response times by 15%.

### Robotics Developer and Research Assistant

Jan 2024 – May 2024

*Multi-Agent Robot Systems Lab - Part Time*

*Vancouver, Canada*

- Created Python scripts in Robot Operating System (ROS) to support pathfinding and multi-agent robotic systems.
- Performed spatial analytics using Zed2 vision cameras for accurate data interpretation and robot navigation.
- Collaborated to implement automation technologies, boosting operational efficiency by 40% and reducing errors by 25%.

## PROJECTS

**WasteWise** | *Automated garbage sorting using object detection and AI.*



**RAG, React Native, Neo4j, OpenAI**

- Developed front-end with React Native components and JavaScript, ensuring a seamless cross-platform user experience
- Retrieval-Augmented Generation pipelines and Facebook AI Similarity Search for efficient data retrieval and object recognition.
- Leveraged OpenAI embeddings for advanced search capabilities enhancing the app's intelligence and user engagement.

**Grocery CMS PHP Restful API** | *Online Grocery Management System*



**PHP, MySQL, RESTful API, Ionic 3**

- Backend CMS using PHP and MySQL, enabling efficient management of grocery inventory, orders, and customer data.
- Developed RESTful APIs with Slim for seamless backend-frontend communication via JSON.
- Token-based authentication with JWT (JSON Web Tokens), ensuring secure user sessions and preventing unauthorized API access.

**NinjaGame - Group Proj** | *Maze Game with Abstract Factory Design*



**Maven, EclEmma, UML, Java, JUnit**

- Modular and extensible maze game using the Abstract Factory design pattern, reducing development time by 30%.
- 95%+ code coverage through comprehensive integration and unit testing using EclEmma, ensuring robust, error-free functionality.
- Project structure and dependency management with Maven, achieving a 100% build success rate across multiple environments.

**Emergency Call Application** | *Emergency Call Management System*



**TypeScript, Next.js, Leaflet Maps API**

- Map-based reporting system using Leaflet Maps API, enabling real-time visualization of emergencies with dynamic vefiltering.
- Responsive and modular UI with Next.js and Tailwind CSS, ensuring seamless user experience across devices.
- Implemented secure report management using MD5 hashing and server-side validation, enhancing data integrity and access control.

## EDUCATION

**Simon Fraser University: 3.82 GPA**

**Burnaby, BC**

*Bachelor of Science in Computer Science*