Manpreet Singh

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Education

Wilfrid Laurier University — **Sep 2025 – Apr 2027**
Master of Applied Computing (Co-op) — GPA: 3.9 / 4

Chitkara University — **Jul 2021 – May 2025**
Bachelor of Engineering (Computer Science) — GPA: 3.7 / 4

Work Experience

CoreAI Technologies — **May 2025 – Oct 2025**
Software Developer — *Remote*

- Engineered a health dashboard using **Next.js** and **TanStack Query**, optimizing data fetching via custom caching and visualizing biomarker trends with interactive **Recharts** components.
- Developed Health Snapshot categorization system organizing **400+** biomarkers across blood, cardiovascular, and performance metrics with detailed information pages, simplifying health tracking workflows.
- Implemented guest PIN access in Android Smart Lock app using **Kotlin** and **Seam SDK**, enabling temporary door access with NFC authentication, PIN validation, and expiration handling.

SalesCode.ai — **Jun 2024 – Dec 2024**
Software Engineer Intern — *Gurugram, India*

- Built geo-targeted banner system with **Spring Boot (Java)** backend, **Flutter** widgets, **AWS S3** storage, and **EC2** deployment with auto-scaling, serving 100K+ sales reps and achieving 15% higher CTR.
- Optimized **Flutter** app performance through widget refactoring and lazy loading patterns, reducing memory footprint from **89MB** to around **62MB**, improving overall app performance.
- Collaborated with 5 engineers in **Agile/Scrum** sprints to deliver 5+ production **Flutter** features, implementing **unit tests** and incorporating code review feedback to maintain production-grade code quality.

Projects

Qure | *Frontend* | *Backend* — **Node.js, Express.js, React Native, PostgreSQL, Socket.IO, Redis, Docker**

- Developed a Full Stack clinic queue system using **Node.js** and **TypeScript**, solving real-time synchronization challenges for patient and admin workflows through **JWT** authentication and role-based access control.
- Engineered real-time queue system with **Socket.IO** room-based architecture achieving **<100ms latency**; implemented fault-tolerant token management via atomic **PostgreSQL** transactions to prevent race conditions.
- Built asynchronous job pipeline with **BullMQ** and **Redis** for **Cloudinary** uploads, reducing upload latency by **70%**. Containerized with **Docker** and deployed on **Render** cloud platform.

MyTrackr | *Source Code* — **Java, XML, Android, Firebase, Gemini SDK, ML Kit, Cloudinary**

- Developed Android expense tracking app using **ML Kit** OCR and **Gemini AI** for automated receipt scanning with **AlarmManager** based expiry notifications, reducing manual data entry time by 80%.
- Implemented automated budget tracking with real-time expense aggregation, multilingual support, CSV export, cloud-synced **Cloudinary** receipt storage, and comprehensive **JUnit** test coverage.

Airbnb Price Analytics & Geospatial Mapping | *Source Code* — **Python, Scikit-Learn, Folium, Pandas**

- Engineered a **Scikit-Learn** pipeline with **GridSearchCV** tuning to analyze NYC rental trends and predict pricing.
- Created an interactive Geospatial Heatmap using Folium to visualize price density across 36K+ listings, identifying neighborhood price clusters after rigorous IQR-based outlier removal.
- Performed Exploratory Data Analysis (EDA) using Pandas, Matplotlib and Seaborn to handle missing values and perform feature scaling, ensuring data integrity for regression modeling.

Leadership & Activities

Instructional Assistant (System Programming), Wilfrid Laurier University — **Jan 2026 – Present**

- Acting as a technical problem solver for 50+ students regarding Shell scripting and C programming, while evaluating lab assignments to ensure high standards of logic and code readability.

SKILLVARZ 1.0 Hackathon | *Semifinalist* — **May 2025**

- Built immersive 3D web experiences (Food Drone delivery simulation and Amaya Cafe) using **Three.js**, **React Three Fiber**, and **GSAP**, collaborating with a 5-member team.

Technical Skills

Languages: JavaScript, TypeScript, Java, Kotlin, Python, C++, HTML/CSS, SQL, Bash/Zsh
Web & Backend Development: React, Next.js, Node.js, Express, Spring Boot, Three.js, GSAP, TanStack Query
Mobile Development: React Native, Flutter, Android SDK (Kotlin/Java), ML Kit, Firebase
Data Science & ML: Pandas, NumPy, Scikit-Learn, Matplotlib, Seaborn, Folium, GridSearchCV
Infrastructure & Developer Tools: AWS (EC2, S3), Docker, PostgreSQL, MongoDB, Redis, Git, Socket.IO, JUnit & Jest