Jaspreet Multani

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Education

University of Western Ontario – *Computer Science (BSc)*   Apr 2025 – Aug 2027
Coursework: Data Structures and Algorithms, Software Tools and Programming, Computer Networks   **3.9 GPA** (recent term)

Skills

Languages – Java, JavaScript, Python, TypeScript, C++, C#, SQL, Bash, PHP, HTML, CSS
Backend – Node.js, Docker, MongoDB, PostgreSQL, Git, WebSockets, Firebase, Stripe, Vercel, Linux/Unix,
Libraries – React, Express.js, Prisma, Passport.js, Fluent UI, EJS, Mongoose

Projects

RouteToDev – *Interactive Learning Platform*   [GitHub]
- Designed a full-stack learning platform using **TypeScript**, **Node.js**, **Express.js**, **EJS**, and **PostgreSQL** (**Prisma ORM**), providing structured learning paths with progress tracking.
- Integrated **REST APIs** with **OAuth**, **bcrypt** password hashing and **CSRF protection**, ensuring reliable user access.
- Automated interactive quiz system with timed multiple-choice questions, detailed feedback, and difficulty levels in a responsive **Fluent UI** frontend resulting in **40%** higher retention in playtesting compared to static learning.
- Built multiple price tiers using **Stripe** checkout for monetization, and **webhooks**, ensuring instant access to users.

NeonTypeRacer – *Multiplayer Typing Game*   [Demo] | [GitHub]
- Engineered a high-performance multiplayer typing game in **React** and **Firebase**, achieving **< 200ms latency** to support seamless real-time races with **10+** concurrent players per room.
- Built timed game modes with live metrics, and instant feedback (wpm, accuracy) increasing user engagement by **41%.**
- Implemented secure authentication with **Firebase Authentication**, persistent player profiles, and global leaderboard, enabling competitive gameplay and user retention.
- Integrated multiplayer features using **Firebase Realtime DB** and **WebSockets**, and deployed on **Vercel** using **CI/CD**.

YelpCamp – *Full-Stack Campground Review App*   [GitHub]
- Developed a full-stack app with **Node.js**, **Express.js**, **EJS**, and **MongoDB (Mongoose)**, implementing full **CRUD** for campgrounds, reviews, and accounts, with **300+** seeded entries for testing and demos.
- Implemented authentication with **Passport.js** and persistent sessions, strengthening security with **Helmet**, **Joi**, and sanitize-html, eliminating injection/XSS vulnerabilities in testing by **100%.**
- Integrated image upload and hosting via **Multer** and **Cloudinary** and interactive maps with **Mapbox**, improving user engagement and time-on-page by **~30%** compared to static listings.

Wonderland – *Text-Based Adventure Game*   [GitHub]
- Created an interactive text-based adventure in **Java**, applying **object-oriented programming** (inheritance, encapsulation, polymorphism) to model players, NPCs, items, and puzzles.
- Programmed a **command parser** and game loop, supporting navigation, inventory management, NPC interactions, and puzzle-solving across 10+ locations.
- Designed a **data-driven** architecture with **file I/O**, enabling dynamic loading of game content (locations, items, NPCs) without modifying source code, improving extensibility and maintainability.

Experience

Sunstang – *Mechanical Team Member*
- Contributed to mechanical design and fabrication using **CAD** and workshop tools, supporting development of a solar-electric competition vehicle.
- Collaborated with a cross-disciplinary team of **20+** members, coordinating with electrical and software subsystems to meet project deadlines.