

Karanvir Heer

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Experience

Government of Ontario (MCCSS)

Software Engineer

January 2023 — August 2023

- Collaborated with cross-functional teams to build features and develop **Java**-based automated tests with **Selenium** and **RESTful APIs**, reducing test runtime by 80% and accelerating release cycles
- Built automated testing pipelines simulating 1,000+ concurrent users, managing **OAuth 2.0** authentication and report generation, boosting system reliability and enabling thousands of citizen transactions daily
- Designed architecture diagrams and documented workflows to accelerate onboarding and improve team productivity
- Led framework modernization, boosting performance by 40% and reducing load across distributed environments

Enbridge

Security Engineer

May 2021 — December 2021

- Scripted **Python** automations to parse employee CSV data, generate real-time reports, maintain an **SQL** database, and validate cybersecurity mandate compliance for 3,000+ accounts, improving audit coverage and data accuracy
- Implemented **role-based access control (RBAC)** across internal systems to strengthen data security and compliance
- Developed custom **ServiceNow** workflows and backend logic to automate user provisioning and access approvals, accelerating onboarding for 2,000+ employees and reducing approval backlog by 60%

Skills

Languages: Java, Python, JavaScript, HTML, CSS, SQL, Bash, Punjabi

Technologies: Docker, Git, Unix/Linux, AWS, Azure, React.js, Node.js, PostgreSQL, Jenkins

Expertise: Full Stack Web Development, APIs, QA & Testing, Databases, IAM & Security

Projects

Statflix

Analytics platform uncovering Netflix viewing patterns and trends

August 2025

- Engineered **Node.js** data pipelines to parse and aggregate 32,000+ titles, computing detailed viewing metrics and trends
- Optimized title search with **fuzzy-matching algorithms**, reducing lookup latency by 90% across large datasets
- Implemented **PostgreSQL** caching layer, reducing metadata retrieval from 2.3s to 200ms for responsive queries
- Deployed microservice architecture with **Docker**, delivering interactive, visual analytics through a **React.js** web interface

Student Marketplace

Student-focused marketplace for buying, selling, and exchanging goods

January 2024

- Engineered backend pipelines with **Spring Boot** and **MySQL**, enabling real-time ad posting and management
- Built dynamic search, filtering, and automated email notifications, supporting thousands of student interactions daily
- Developed admin dashboards with **role-based access control**, allowing real-time user and advertisement management
- Created academic services modules for textbook exchange, study groups, and tutoring, driving platform engagement and usability

Education

Toronto Metropolitan University (Ryerson University)

Computer Science Co-op (B.Sc), CGPA: 3.82

September 2020 — April 2024

- Coursework: Data Structures & Algorithms, Databases, Machine Learning, Data Mining, Data Science, Computer Architecture, Computer Networking & Security, Web Applications, Computer Graphics, Operating Systems