Karanvir Heer

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Experience

Ministry of Children, Community and Social Services

Software Engineer   January 2023 — August 2023

- Junior Software Engineer collaborating with cross-functional teams to design and maintain backend automation frameworks, integrate APIs, and optimize test workflows for scalable and reliable web services **(Java / JMeter)**.
- Integrated Mailinator API into automation workflows, reducing runtime by 80% and improving **CI/CD** reliability.
- Load-tested high-traffic messaging **APIs**, automating **OAuth** token refresh and validating cross-role delivery to ensure reliability and prevent pre-production failures.
- Migrated automation framework from **Java** 8 to 17, updating deprecated APIs and refactoring backend logic to enhance performance and maintainability.

Enbridge

Security Engineer   May 2021 — December 2021

- Automated compliance tracking workflows by parsing CSV data and generating real-time reports, ensuring adherence to TSA cybersecurity mandates across 3,000+ accounts **(Python / SQL)**.
- Integrated role-based access controls (RBAC) and enforced 2FA adoption across enterprise systems, strengthening authentication protocols for distributed teams **(SailPoint / LDAP / OAuth)**.
- Developed **ServiceNow** forms to streamline access requests and backend approvals for thousands of Enbridge employees, improving efficiency and compliance.

Skills

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

Technologies: React.js, Node.js, PostgreSQL, Docker, Git, Linux, Windows, Selenium

Expertise: Full Stack Web Development, Backend Engineering, Testing & APIs, Databases, IAM, Product

Projects

Statflix ⬈

Personalized recap of your Netflix viewing habits   August 2025

- Built a full-stack analytics platform with **Node.js, Express, React, PostgreSQL, and Docker** to parse Netflix history.
- Implemented fuzzy-matching algorithms in **JavaScript** and **PostgreSQL** to normalize titles and improve accuracy.
- Designed a **PostgreSQL** caching layer with a 32K-title dataset, reducing metadata lookup from seconds to milliseconds.
- Containerized and deployed services with **Docker** to Vercel + Render, integrating **SQLite** and **CI/CD** workflows.

Student Marketplace ⬈

Advertisements website for TMU students   January 2025

- Enabled students to post, filter, and message about ads using **React, Java, and Spring Boot**.
- Built dashboards for users and admins to manage listings, textbook exchanges, study groups, and communications.

Education

Toronto Metropolitan University (formerly 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