

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, TypeScript, JavaScript, HTML, CSS, SQL, Bash, Punjabi

Technologies: AWS, Node.js, Next.js, DuckDB, Docker, Git, Unix/Linux, Tailwind, PostgreSQL, Jenkins

Expertise: Full Stack Web Development, ML & Data Engineering, Cloud Technologies & APIs, Databases

Projects

DataLock

AI-powered web platform optimizing in-game equipment choices for players

December 2025

- Trained **ML model** (XGBoost) on 2.4M+ matches and 180,000+ players for personalized item predictions
- Deployed serverless inference backend on **AWS Lambda, S3, & API Gateway**, providing recommendations in $\leq 250\text{ms}$
- Built responsive **Next.js/Tailwind** UI with guided hero selection and explorable item analytics
- Implemented error handling and fallback states so failed recommendations never break the user experience
- Coordinated **QA** with dedicated players, turning gameplay feedback into prioritized bug fixes and UX improvements
- Serve 50+ active users, maintaining the site with ongoing updates and new features

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
- 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

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