Mehak K Sandhu

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Education

University of Guelph — Guelph, ON
Bachelor of Computing in Computer Science — *Sep 2023 – Apr 2027*

Technical Skills

Languages: Java, Python, C, SQL (PostgreSQL), JavaScript, R, FORTRAN
Tools & Technologies: Git, Docker, Playwright, Snowflake, PostgreSQL, Power BI, Tableau
Libraries: Pandas, NumPy, Matplotlib

Experience

Quality Engineer — May 2026 – Present
Royal Bank of Canada (RBC) — *Toronto, ON*

- Built a Snowflake–Salesforce automation pipeline that eliminated manual SQL script execution on object updates, reducing a 2-hour manual process to near-zero
- Refactored the Playwright test repository to improve reusability and reduce setup overhead across the team
- Developed a Python tool to automate Confluence page updates, replacing manual cross-table comparisons and edits with a single automated workflow

Software Developer Engineer in Test — May 2025 – Aug 2025
Royal Bank of Canada (RBC) — *Toronto, ON*

- Implemented service virtualization using Java and Spring Boot to mock external payment engines, isolating the test environment from live systems during QA
- Eliminated unintended transactions flowing through real payment processors by replacing them with lightweight mock services

IT Technician — Sep 2024 – Present
University of Guelph — *Guelph, ON*

- Provided technical support to students and staff, resolving hardware, network, and software issues in a fast-paced environment

Automation Engineer — Jun 2024 – Aug 2024
Prepr — *Toronto, ON*

- Identified and resolved bugs through exploratory testing and code-level debugging in collaboration with developers
- Performed end-to-end functional testing on a new e-learning platform, validating feature releases across the application

Projects

Intelligent Python Tutor | *Python, Next.js, PostgreSQL, scikit-learn* — Sep 2025 - Dec 2025
GitHub | Live

- Built an adaptive e-learning platform that personalizes coding practice based on student performance
- Implemented an ML microservice using scikit-learn for knowledge tracing and question difficulty adjustment
- Designed a rules-based tutoring engine as a fallback, keeping the ML layer optional and modular

311 Complaint Patterns & Response Times | *Python, Java, TypeScript, MySQL* — Jan 2026 - May 2026
GitHub | Live

- Built an interactive map dashboard to analyze NYC 311 complaint data, including trends, resolution times, and service hotspots
- Developed a data ingestion pipeline to pull from the NYC Open Data API and load into a MySQL database on a configurable refresh cycle
- Implemented filtering by borough, complaint type, status, and date range to support exploratory data analysis