Mehak K Sandhu

416-254-9545 | sandhu.mehak032@gmail.com | mehaks.pages.dev

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
Tools & Technologies: Git, Docker, Playwright, Snowflake, PostgreSQL

Experience

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

- Built a Snowflake-Salesforce automation pipeline that removed manual SQL script execution triggered by object updates
- Reduced a recurring two-hour manual workflow to near-zero through automation
- Developed a Python tool to automate Confluence page updates, replacing manual cross-table comparisons and edits with a single workflow

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

- Implemented service virtualization in Java and Spring Boot to mock external payment engines and isolate QA from live systems
- Prevented unintended transactions from reaching real payment processors by replacing external dependencies 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

Aerial Wildlife Counting | *Python, Jupyter notebook* — GitHub | Live

- Fine-tuned a YOLO-based detector to identify and count individual animals in drone survey imagery, addressing occlusion and small-object challenges at altitude
- Implemented lightweight tracking (SORT) across sequential frames to prevent double-counting animals as the drone traverses the survey area
- Benchmarked detection-based counting against a density-map regression baseline for dense herd/flock scenes
- Visualized per-region animal density as a georeferenced heatmap

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

- Built a geospatial dashboard to map complaint density and identify hotspots across boroughs, with configurable filtering by location, time, and category
- Developed a data ingestion pipeline handling unstructured/semi-structured records from a public API, with cleaning and normalization into a queryable database

Climate Risk Analysis | *JavaScript, Python* — GitHub | Live

- Built an end-to-end pipeline for environmental time-series data: ingestion, cleaning, and feature extraction from raw climate records
- Applied statistical analysis (correlation, skewness) and K-means clustering to identify patterns and risk regimes in temperature/precipitation data
- Trained a regression model to predict risk scores from environmental features, with anomaly detection to flag outlier observations