

Mahek Cheema

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EDUCATION

University of Toronto St. George

Toronto, ON

BSc Hons. - Computer Science (Artificial Intelligence Focus) Co-op | Annual GPA: 4.0/4.0 Sep. 2022 – May 2027

- Blueprint (VP of External), Women in Computer Science (Mentorship Director), UTMIST (Software Developer)

WORK EXPERIENCE

Software Engineer Intern

May 2025 – Aug. 2025

Wayfair

Toronto, Ontario

- Designed and implemented the end-to-end advertising campaign audit pipeline, migrating from a legacy model to a new granular schema, ensuring **100%** audit coverage across all evolving campaign structures and data models.
- Developed complex **SQL** transformations to reconcile legacy audit data with the new schema, including **backfilling 1M+ rows** to preserve large-scale campaign, budget, keyword, and bidding change histories.
- Built and deployed **Airflow DAGs** on **GCP** to orchestrate ETL workflows processing **20K+ campaign updates daily**, delivering production-ready pipelines with thorough data validation to ensure reliable audit data.

Software Developer Intern & Student Ambassador

May 2024 – Aug. 2024

Royal Bank of Canada

Toronto, Ontario

- Spearheaded the development of a proof of concept **Java** application to guide the migration from **Jenkins** to **GitHub Actions** for the CI/CD pipeline, which was used to successfully migrate **24** applications.
- Resolved **15** high-priority **Checkmarx** vulnerabilities in a mainframe **Java** application by developing and implementing secure code fixes, reducing the application's security risk from high to compliant status.
- Achieved **80%+** code coverage and reduced security risks by **75%** through end-to-end testing with **JUnit**.

Software Engineer Fellow

Jun. 2023 – Sep. 2023

Meta & Major League Hacking

Remote, New York, NY

- Developed a **Python** web-application with **Flask**, **Jinja**, **HTML**, **CSS**, and **MySQL** for database management.
- Containerized the application using **Docker** and implemented comprehensive monitoring with **Prometheus** for metric collection and **Grafana** for visualizing performance data, optimizing system and container performance.
- Enhanced security on **CentOS** servers by configuring **Fail2Ban** and **Nginx** with SSL as a reverse proxy.

PROJECTS

Loyalink | React, Express, Node.js, Prisma, SQLite, Railway, REST API

Feb. 2025 – Apr. 2025

- Built a full-stack rewards platform for the UofT Computer Science Student Union using **React** and **Node.js**.
- Integrated QR-authenticated redemptions, dynamic transaction workflows, and full **CRUD** across core entities.
- Developed backend APIs with **Prisma ORM** and **SQLite**, supporting real-time access control for 5 user roles.

Qatalyst (Supervised by Prof. David Jorjani) | React, Node.js, TypeScript, Firebase

Sep. 2024 – Dec. 2024

- Developed a web platform with **React** to display GitHub metrics like code quality, providing user skill insights.
- Built a **Node.js** and **TypeScript** backend, using **Octokit** for GitHub API access and **Axios** for HTTP requests.
- Set up **GitHub Actions** for CI/CD and integrated **Chart.js** to visualize user contributions and repository data.

Songwarp | Java, Swing, Spotify Web API, YouTube Data API

Sep. 2023 – Dec. 2023

- Developed a **Java** application with SOLID principles and clean architecture for cross-platform playlist conversion.
- Utilized **Spotify** and **YouTube APIs** to dynamically query and synchronize song metadata across services, integrating user account functionalities for direct playlist uploads to users' YouTube or Spotify accounts.
- Built a responsive UI with **Java Swing** and used **Gradle** for build automation and dependency management.

Rhythm Radar | Python, Pandas, Tkinter, Spotify Web API

Feb. 2023 – Apr. 2023

- Utilized **weighted graph** data structures to model Spotify's music database, incorporating user input to dynamically adjust weights, optimizing search and retrieval algorithms for personalized music recommendations.
- Leveraged **Pandas** for data manipulation, including cleaning, aggregation, and visualization of Spotify data.

SKILLS

Languages: Python, C, Java, TypeScript, HTML/CSS, SQL, R, MIPS Assembly

Libraries and Frameworks: ReactJS, ExpressJS, Pandas, NumPy, Matplotlib, Scikit-learn, Tkinter, Tailwind, Flask

Tools: Git, Prisma, Node.js, Docker, Grafana, Tmux, SonarQube, Jira, Confluence, Checkmarx, Airflow