

# 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

- **Relevant Courses:** Data Structures & Algorithms, Operating Systems, Artificial Intelligence, Machine Learning
- Women in Computer Science (Internal Relations & Student Mentor), UofT AI Hackathon (Outreach Lead)

## WORK EXPERIENCE

### Software Engineer Intern

May 2025 – Aug. 2025

Wayfair

Toronto, Ontario

- Incoming Summer 2025 Software Engineer Intern on the Global Supplier Tech team.

### 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 greater than **80%** overall code coverage and a **75%** reduction in security risks by collaborating with the QE team on end-to-end testing using **JUnit** and assisted with deployment via **UrbanCode Deploy**.

### 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.
- Wrote and maintained **Jest** tests for frontend and backend functionality, and used **Firebase** for data storage.

### 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.
- Implemented a **Junit** test suite, achieving **90%** code coverage for core interactions and **81%** overall coverage.
- 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

- Developed a **Python** application to generate personalized song recommendations based on user-provided playlists.
- 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, AquaScan, NexusIQ