

# Mazen Zarrouk

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## EDUCATION

City College of New York, Grove School of Engineering

12/2025

Bachelor of Science in Computer Science

- **Relevant Courses:** Algorithms, Data Structures, Operating Systems, Software Engineering, Software Design in Java, Theoretical Computer Science, Databases, Object Oriented Programming in C++, Image Processing, Computer Graphics, Probabilities, Statistics, Discrete Math, Linear Algebra, Calculus 1-3.

## SKILLS

- **Languages:** C++, Java, JavaScript, HTML, CSS, SQL, Python, Git, DAX, M
- **Technologies:** Visual Studios, MySQL, Salesforce Ecommerce Cloud, Google Big Query, Microsoft Power BI, Google Analytics, IntelliJ, AWS, Google Cloud, Next.js, React.js, GitHub, Microsoft 365.

## EXPERIENCE

LVMH, New York,

Data Project Manager Intern, LVMH Beauty Tech Division

05/2024 - 08/2024

*Ticket Reporting Analytics Dashboard for **Benefit Cosmetics***

- **Halved** ticket resolution times, decreased manual report generation by **90%** (1 month billable hours saved annually), stimulated revenue growth for US Benefit stores and established a unified, **real time incident analysis** platform for a **multi billion dollar luxury retail conglomerate**.
- Set to **scale** this application for other brands within the **LVMH portfolio**, like Parfums Christian Dior, Givenchy, Kendo, Acqua di Parma; and **scaling** for LVMH internal support.
- Architected an **ETL process** in **SQL** to standardize raw CSV data, ensuring uniformity across many data sources.
- Crafted compelling visuals in Power BI while delivering real time analytical capabilities through interactive features created in DAX.
- Employed a **project management** methodology by setting milestones, timelines, action task due dates, and facilitating weekly meetings with teams at Benefit and LVMH.
- Deployed the application into production for LVMH Beauty Tech employees and Leadership within Benefit Cosmetics.

The Difference, Scarsdale, NY

Backend Software Engineering Intern

06/2023 - 08/2023

- Optimized the backend infrastructure of a health startup by designing and implementing a schema in MySQL, reducing data duplication by **18%** and improving **efficiency**.
- Managed data integrity through schema changes, migration scripts, and validation protocols. Increased data query performance by **22%** by building a daily aggregated results table.
- Migrated legacy data from key tables with zero data loss, utilizing optimized INSERT/UPDATE queries. Further optimized food table performance by **22%** and reduced storage by **10%** through column optimization.

## PROJECTS

FlixRecs – AI Powered Movie Recommendation Web Application

10/2024 - Present

- Developed a full-stack web app integrating AI driven movie recommendations using **Python**, **Flask**, and **Hugging Face's sentence transformer**.
- Designed and deployed a **MongoDB database** to store data for **200k+** movies, optimizing search capabilities.
- Built a responsive **front-end** with **HTML/CSS** and **JavaScript**, implementing features like personalized dashboards, watchlists, and notifications.
- Integrated **TMDb API** for real time movie data, including streaming availability, runtime, and trailers.
- Implemented **JWT authentication** for user login, registration, and password management via **Node.js RESTful APIs**.

Finantum Algorithm – Quantum Portfolio Optimization

09/2024 - 10/2024

- Developed a quantum portfolio optimization algorithm using Qiskit, implementing a Variational Quantum Eigensolver (VQE) and COBYLA optimizer to minimize Hamiltonians for risk return tradeoff analysis in stock investments.
- Processed stock data to construct SparsePauliOp Hamiltonians, and ran simulations to provide optimal portfolio selections and budget allocations, leveraging quantum circuits and hybrid quantum classical algorithms.