

Mazen Zarrouk

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EDUCATION

Grove School of Engineering at the City College of New York

05/2025

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
- **Technologies:** Visual Studios, MySQL, IntelliJ, Oracle VM VirtualBox, AWS, Google Cloud, Next.js, React.js, GitHub

EXPERIENCE

The Difference, Scarsdale, NY

Backend Software Engineering Intern

06/2023 - 08/2023

- **Architected a database schema in MySQL**, optimizing data structure and reducing duplication by **18% across 8 core tables**, demonstrating strong **backend proficiency**.
- **Led the development of a macro nutrition tracking feature**, showing effective **front end and back end collaboration**.
- **Managed data integrity**, ensuring smooth migration and integration of new features. **Increased data query performance by 22%** through database optimization, enhancing user experience.
- **Migrated legacy data with zero data loss and optimized storage by 10%**, utilizing efficient **INSERT/UPDATE queries**. Demonstrated understanding of **data security and resource management**.
- **Implemented a new routines table** to support user workout plans, highlighting ability to **connect front end user interaction with back end data storage**.
- **Influenced the startup's future roadmap** by presenting **ERD diagrams and proposals**, showcasing **communication and technical expertise**.

Google Software Engineering Program (G-SWEP), New York, NY

03/2023 - 05/2023

- **Honed algorithmic proficiency** through intensive coding challenges with a Google mentor, mastering crucial skills like arrays, strings, and recursion for **efficient data manipulation and back end optimization**.
- **Gained insights into Google's full stack development practices** through workshops, learning about **front end frameworks, user experience design, and API integration**, expanding understanding of the full development lifecycle.
- **Networked with Google engineers**, gained valuable advice on **career development, effective coding practices, and navigating technical interviews**.
- **Elevated both front end and back end expertise** by tackling coding problems and receiving expert guidance, significantly enhancing my ability to **build centric web applications**.

PROJECTS

Yapper – Social Media Web Application

10/2023 - 12/2022

- **Led a full stack development** of a Twitter like MVP within a **2 month timeframe**, leading a **cross functional team of 5 developers**. Demonstrated strong leadership, teamwork, and project management skills.
- **Architected and implemented core functionalities** like user management, posting, interactions, and authentication, showcasing proficiency in both **front end development via React and back end development via Supabase**.
- **Enhanced productivity** by building **reusable React components**, highlighting code maintainability and efficiency.
- **Designed and implemented a secure database schema** using Supabase for efficient data storage and retrieval, emphasizing attention to data security and integrity.

JavaFX Shape Visualization and Database Management Project

11/2022 - 12/2022

- Implement **Object-Oriented Programming** principles for accurate geometric calculations, including area, perimeter, and radius of circles and ovals.
- Developed a **JavaFX-based tool**, showcasing shapes with **dynamic rendering** and interactive manipulation features.
- Integrated MySQL database connectivity using JDBC for efficient data management, schema creation, and CRUD operations.