Michael Goldfarb

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Education

Bachelor of Science with Honors, Computer Science & Business — **Aug. 2021 - May 2025**
Lehigh University – GPA: 3.70 — *Bethlehem, PA*
Relevant Coursework Software Engineering, Database Systems, Programming & Data Structures, Systems Software

Skills

Languages Expert: Java, Python, HTML, CSS, JavaScript, SQL | Proficient: Swift, Rust, C++ | Familiar: Go, Solidity, C
Technologies React JS, Spring Boot, Postman, Pandas, NumPy, PostgreSQL, MongoDB, Docker, Bash, AWS, Git, Linux
Involvement Lehigh Coders Community (Professional Dev. Chair), Blockchain Club, AEPi (Treasurer, Academic Chair)

Experience

Lehigh Blockchain — **Jun. 2024 - Present**
Undergraduate Research Fellow — *Bethlehem, PA*
- Develop a Stellar-like hierarchical consensus mechanism to model a decentralized global cross-CBDC payment solution.
- Deploy & invoke Soroban smart contracts across 5+ machines to model regions, boosting transaction efficiency by 30%.
- Create a pseudo `verkle` tree in Rust with Marlin and `ark_works` libraries, improving cryptographic efficiency by 25%.

Oracle — **Jan. 2024 - Present**
Software Engineer (Capstone) — *Bethlehem, PA*
- Improve transaction speed by 25% for ECB digital euro by adjusting Oracle DB using PL/SQL, REST APIs, and VBCS.
- Lead database sharding implementation, enhancing scalability and performance by 40% for high-volume data.
- Conduct database stress and benchmark tests using Artillery, identifying and resolving 10+ performance bottlenecks.

A.I.M.S Lab Mount Sinai Hospital — **Jan. 2024 - Present**
Machine Learning Intern — *New York, NY*
- Engineer multimodal models linking genetic, clinical, and social data, boosting disease prediction accuracy by 20%.
- Parse data from 200k+ patient summary PDFs, extracting critical information to enhance model training and validation.
- Deploy advanced augmented intelligence models, boosting patient outcomes by 15% using deep learning algorithms.

Outlier — **Jun. 2024 - Aug. 2024**
LLM QA Engineer — *Remote*
- Train and fine-tune a generative AI model for the Bulba project using RLFH, enhancing response accuracy by 30%.
- Evaluate tools and monitor model decisions by analyzing JSON code, ensuring precise & reliable AI-generated content.
- Create and refine AI prompts, optimizing the prompts for high-quality outputs and reducing response errors.

STEM-SI — **May 2023 - Aug. 2023**
Software Engineer Intern — *Bethlehem, PA*
- Trained models on historical CDC data, achieving 85% prediction accuracy in future influenza cases.
- Designed powerful data visualizations in Python to provide actionable insights into mitigating influenza spread.

Projects

MLB Game Predictor | *Python, Pandas, NumPy, Spring Boot, React JS, PostgreSQL, AWS* — **May 2023 - Present**
Creator and Developer — *New York, NY*
- Use machine learning to predict winner of MLB game; Scrape MLB Stats API to get stats from 2,430 past/current games.
- Develop linear regression & random forest models to predict winners; Clean & filter 20+ datasets using NumPy/Pandas.
- Create companion website with game predictions and prediction accuracy by team, attracting 500+ visitors monthly.

OhConnections | *HTML, CSS, React JS* — **Mar. 2024 - Jul. 2024**
Creator and Developer — *New York, NY*
- Created MLB version of New York Times' Connections, gaining 1,000+ active users within the first month of launch.
- Developed logic and state management for real-time user interactions, including user input handling and animations.
- Seamlessly integrated a user-friendly interface with visual MLB player groupings, increasing user retention by 25%.

Mountain Hawk Food Finder | *Swift, Spring Boot, Python, Firebase* — **Jun. 2023 - Oct. 2023**
Creator and Developer — *New York, NY*
- Developed a visually-appealing full stack iOS app for Lehigh dining, enabling easy navigation between dining options.
- Implemented backend code to store user information, item ratings (average/given), business hours, and daily menus.
- Designed and optimized app frontend to allow user to view eateries on Apple Maps and easily find dining options.