Eric Sohel

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Education

Stony Brook University(Honors) **Expected Graduation: June 2026**
GPA: 4.0, Computer Science and Applied Mathematics, Math Club, Competitive Programming *Long Island, New York*

Stuyvesant High School **September 2019 - June 2023**
GPA(unweighted): 4.0, SAT Score: 1580/1600, Math Team, Competitive Programming *Manhattan, New York*

Relevant Coursework

- Data Structures
- Linear Algebra
- Multivariable Calculus
- Honors Classical Physics
- Cyber Security
- Discrete Mathematics
- Systems Programming
- Software Development

Experience

Art of Problem Solving **August 2023 – December 2023**
Programming Problem Developer *Remote*

- Collaborated with a team of programmers and educators to create a diverse curriculum that not only tested a wide range of algorithmic concepts and data structures but also encouraged creative problem-solving and strategic thinking.
- Efficiently graded assignments and provided insightful feedback, significantly contributing to students' conceptual comprehension and growth.

Hanover Capital Group **June 2023 – August 2023**
Software Engineer Intern *New York, New York*

- Engineered an internal code search engine, enhancing codebase accessibility and developer efficiency. Implemented real-time monitoring using Kafka alerts in Python, significantly improving system reliability and incident response time.
- Developed a robust REST service in Java Spring MVC, exposing a PL/SQL function for retrieving real-time stock data, greatly enhancing data-driven decision-making capabilities.
- Identified and exposed critical vulnerabilities in Hanover's proxy server design through extensive testing with over 2 million requests, leading to significant improvements in system resilience.

Projects

Flask-Based Twitter Clone with Live Chatting — *https://github.com/esohel30/TwitterClone* **June 2023 – July 2023**

- Designed and implemented a Twitter clone with Flask and Flask-SocketIO, integrating live chat and tweet functionality. Enhanced real-time user interaction and communication, and managed backend processes and database interactions using SQL.
- Engineered features such as user authentication, session management, and dynamic content rendering for a Flask-based social media platform. Utilized HTML/CSS and JavaScript for frontend development, with a strong focus on backend logic and SQL database management.

Musically: Music Analysis App for Song Lovers! — *https://github.com/esohel30/Musically* **May 2023 – June 2023**

- Developed 'Musically', a dynamic Flask web application, leveraging the Spotify API for in-depth music analysis and innovative Markov chain-based lyric generation, featuring user authentication, interactive music visualization, and advanced search capabilities.
- Enhanced 'Musically' by integrating data to assess music danceability and employing complex algorithms for trend prediction and a song mixer feature, significantly boosting user engagement and fostering creative exploration.

Pac-Dude: A processing Based Arcade Game — *https://github.com/esohel30/Pacdude* **June 2022 – July 2022**

- Engineered "Pa-Dude" using object-oriented principles for modular design, ensuring code reusability and efficient gameplay mechanics, including state management and collision detection.
- Incorporated Dijkstra's algorithm and innovated unique fleeing algorithms for ghost NPCs, enriching gameplay in Chase, Scatter, and Frightened modes, and exemplifying cutting-edge technical ingenuity in AI pathfinding and strategic game mechanics.
- Employed the Processing language to infuse traditional gameplay with advanced features like algorithmic map generation and interactive sound effects.

Awards

National Cornell Trading Competition **October 2023**

- Ranked 5th Place
- Programmed three algorithmic trading strategies targeting systematic equities, derivatives, and crypto markets.

National Citadel Terminal Ai Competition **August 2023**

- Ranked 2nd Place
- Designed and programmed the highest ranked algorithm for a competitive Tower Defense-style game.

Skills

Languages: C++, Python, Java, R, SQL
Certifications: Data Structures & Algorithms I-IV (Georgia Tech), Options 101, 201 (Akuna Capital), Market Concepts (Bloomberg)