Brayden Goldstein-Gelb

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EDUCATION

Brown University, 3.91/4.00 GPA (Magna Cum Laude) Providence, RI | Class of 2025
Computer Science BSc, Honors; Mathematics BSc

- CS Coursework**:** Machine Learning Algorithms, Design and Analysis of Algorithms, Computer Vision, Computer Systems
- Math Coursework: Linear Algebra, Calculus I-III, Graph Theory, Statistical Inference, Real and Complex Analysis

Somerville High School, 4.82/4.33 GPA Somerville, MA | Class of 2021

SKILLS

- Programming Languages: Python, HTML/CSS, JavaScript, Java, C/C++, Julia, Pyret
- Frameworks: NumPy, Pandas, Flask, PostgreSQL, SQLAlchemy, Vue, D3, TensorFlow, PyTorch, Node, Express, Qiskit

EXPERIENCE

NewGrid Inc. *Software Engineer (Incoming)* Somerville, MA | Aug 2025 – Present

- Returning full-time after internship.

NewGrid Inc. *Software Engineer Intern* Somerville, MA | May 2024 – Aug 2024

- Automated the scraping, processing, and storage of power grid outage data, streamlining data collection for integration with NewGrid's database and enabling real-time monitoring for the service team.
- Developed an interactive user interface using Vue.js and D3, allowing the team to visualize outage data via a Gantt chart and generate reports on grid conditions, streamlining the assessment process and improving decision-making.
- Contributed key features to NewGrid's desktop application, enabling automated import/export of grid settings, significantly reducing manual data entry and setup time.

SULI Program, Oak Ridge National Lab *Quantum Computing Research Intern* Oak Ridge, TN | May 2023 – Jul 2023

- First author on a paper available on arXiv, currently undergoing submission to leading academic journals.
- Developed innovative methods for solving constrained optimization problems using the Quantum Approximate Optimization Algorithm (QAOA).
- Mathematically proved the algorithm's correctness and conducted simulations to demonstrate its strong performance.

Visual Computing Lab, Brown University *Undergraduate Research Assistant* Providence, RI | May 2022 – May 2023

- Built an interactive application for synthesizing handwriting via a recurrent neural network.
- Implemented and optimized algorithms for adapting augmented reality content in real-time to dynamic environments using high-performance Unity shaders.
- Won the Audience Favorite Award at the Brown CS Department's Annual Undergraduate Research Symposium.

LEADERSHIP

Brown University *Teaching Assistant, Theory of Computation* Providence, RI | Aug 2024 – Present

- Created problem sets and example solutions, assisted in grading, held weekly office hours.

Wyzant Tutoring *Math and Computer Science Tutor* Somerville, MA | May 2021 – Present

- Over 350 hours of tutoring experience, working with 50+ students ranging from middle schoolers to executives.
- Maintained a five-star rating, helping students build confidence and mastery in Python, Java, Calculus, and Algebra.

PROJECTS

Bus Route Optimization Algorithm

- Developed a genetic algorithm inspired by evolutionary processes to optimize bus routes for the city of Somerville, resulting in a system 116% more efficient than the existing one.
- Winner of Tufts Community Relations award for top Somerville project, 15th place at Massachusetts Region IV Science Fair, 1st place at Somerville High School Science Fair.

Re-Font Chrome Extension

- Published a Chrome extension that allows users to customize website appearance and improve accessibility, with over 9,300 total installs and 750 current active users.
- Continuously improved the user interface based on feedback, enhancing user experience and accessibility.

Running Data Visualization Web App

- Developed a web app using Node.js to extract and visualize exercise data from the Strava API, providing users with interactive elements to explore various aspects of their workout data.

Quantum Mechanics Proofs Library

- Created a library in the Lean Theorem Prover to model quantum particles, measurements, and multi-particle states.
- Demonstrated the library's capabilities by constructing a formal proof of the no-cloning theorem.