Matthew C. Voynovich

Roslyn Heights, NY | +1 (917) 391-8499 | Voynovich.Matt@gmail.com
https://www.linkedin.com/in/matthew-c-voynovich | https://mvoynovich.github.io | https://github.com/mvoynovich

EDUCATION

RENSSELAER POLYTECHNIC INSTITUTE **Troy, NY**
B.S. in Computer Science and Information Technology & Web Science Aug 2023 - Expected May 2026
Concentration in AI, Machine Learning, and Data Science

Cumulative GPA: 3.97/4.0; Dean's List 2023-2024
Relevant Coursework: Data Structures, Algorithms, Foundations of Computer Science, Discrete Mathematics, Numerical Techniques in Computing, Intro to Logic Based AI, Computer Organization, Web Science Development, Computational Vision, Intro to AI, Math Foundations of Machine Learning

Technical Skills: Advanced in SQL, PHP, JavaScript, Java, HTML/CSS, React, Node.js, Express.js, MongoDB, Python, C, C++ (Data Structures Implementation), Machine Learning Techniques (Convolutional Neural Networks, PyTorch, etc)
Awards and Leadership: 3x Dean's Honor List; Head of Events/Coach for Rensselaer Running Club, UPE Honor Society (Computing and Information) Member

ROSLYN HIGH SCHOOL **Roslyn Heights, NY**
Weighted GPA: 103.5 Sep 2019 - June 2023
National Honor Society, Science National Honor Society**,** Cross Country and Track Captain;

WORK EXPERIENCE

INVESTIGATIONS OF QUANTUM PHASE ESTIMATION **RPI, NY**
Undergraduate Researcher, RPI Jan 2025 – Present

- Researching applications of Quantum Phase Estimation (QPE) in Quantum Signal Processing
- Studying Shor's algorithm for decryption and expanding to period finding in periodic functions
- Exploring the mathematical foundations of quantum Fourier transforms, eigenvalue estimation, and phase estimation techniques to enhance signal processing methods.
- Designing, implementing, and optimizing quantum circuits using Qiskit, leveraging IBM's quantum computing framework to simulate and test QPE-based algorithms. Testing said quantum programs on the RPI Quantum Computer, evaluating performance and accuracy of phase estimation techniques

PROJECTS

AUTOMATED REASONING LIGHTUP (AKARI) SOLVER **RPI, NY**
Developer Nov 2024 – Dec 2024

- Solved the popular logic puzzle, Akari, using Z3, a SMT solver, applying automated reasoning techniques to efficiently solve puzzle configurations.
- Implemented constraint-based algorithms to validate board configurations against game rules and generate solutions dynamically. Utilizing automated reasoning techniques to efficiently solve board states, ensuring logical accuracy.

FRESH N' CLEAN **RPI, NY**
Developer and Project Lead Aug 2024 – Dec 2024

- Co-developed Fresh n' Clean, an on-demand laundry service platform connecting users with laundromats and independent contractors, similar to Uber.
- Utilized JavaScript, PHP, Google Maps API, and PayPal API to create an interactive and effective web application.
- Collaborated in a team using a modified Agile Scrum framework, focusing on iterative development and feedback loops.
- Managed group work effectively through GitHub Projects and Issues for task tracking and version control.

ID3 DECISION ALGORITHM **Roslyn High School, NY**
Developer Nov 2022 – Dec 2022

- Implemented the ID3 algorithm to build a decision tree for making optimal decisions based on data input from a CSV file.
- Applied machine learning principles to optimize decision-making by calculating information gain and selecting the best attributes for data splits.
- Processed large datasets in Java, building a model capable of classifying new, unseen data with improved accuracy.

ACTIVITIES

RENSSELAER RUNNING CLUB **RPI, NY**
Head of Events/Coach Aug 2023 – Present

- Coordinate race and meeting schedules for the running club, ensuring effective event planning and smooth operations.
- Maintain a disciplined daily training regimen to prepare for competitive races, while also coaching club members to help them improve their personal fitness and performance.