

Muhammad Alafifi

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EDUCATION

Rensselaer Polytechnic Institute - *B.S. in Computer Science* August 2021 - May 2025

- **Relevant courses:** *Cloud Computing & Virtualization, Distributed Systems & Algorithms, Operating Systems, Database Systems, Parallel Computing, Network Programming, Machine Learning, Network Science, Linear Algebra, Graph Theory, Quantum Computing*

EXPERIENCE

Rensselaer Polytechnic Institute - *Undergraduate Mentor* August 2024 - December 2024

- Created and graded the assignments for the course, and held weekly office hours to assist, guide, and teach students through the course topics and assignments for Prog. Languages (CSCI 4430)

Data Annotation Tech - *Software Developer (freelance)* May 2024 - Present

- Developed software to train AI and LLM's on a constant basis in a diverse set of projects
- Created high quality labeling and guidelines to train the rapidly evolving ML programs

City Health Tech, Remote - *Software Engineer Intern* May 2023 - December 2024

- Developed and launched AI powered platform using Azure to assist users with acts of kindness
- Worked in a Agile Scrum environment to build a front and backend for the app to connect users

C2QA QIS101 Brookhaven National Laboratory, Remote - *Summer Program* June 2022 - July 2022

- Using Python and IBM's Qiskit, employed a range of scientific computing skills from algorithmic analysis, machine learning, and linear algebra while simulating digital and quantum circuits

PROJECTS

2D Heat Equation Simulation Using Parallel Computing - *Project Developer* March 2025 - May 2025

- Using MPI and CUDA, simulated the performance of the program when compared to different parallelized levels of the problem using both of the technologies individually and together

Distributed Key-Value Store Implementation - *Project Developer* September 2024 - December 2024

- Developed a replicated fault-tolerant network system to implement and test replicated servers on causal consistency, consensus based replication (Paxos), and Byzantine fault-tolerance

IBM Widget for Interactive Quantum Art - *Project Student Lead* January 2023 - May 2023

- Developing a widget to simulate fractal art based on qubits using Qiskit in order to introduce children and the public into the field of Quantum Computing.

RCOS Thrifty - *Project Co-Lead /Full-stack Developer* September 2022 - May 2023

- Developed a webpage using JavaScript and React.js for the front end and Firebase for the backend to connect RPI students to each other to help with the sale and purchase of used items.

RCOS CRISIS - *Frontend Developer* January 2022 - May 2022

- Team member developing a more accessible website, CRISIS, with a more modern and easily usable interface for RPI's course and degree information using React, TypeScript, HTML and CSS.

EXTRACURRICULAR/ORGANIZATIONS

Muslim Student Association - *Vice-President* October 2021 - May 2024

- Organized and led the Muslim community of over 200 on campus in a post-Covid environment

American Computer Science League - *Competitor & Volunteer* November 2019 - June 2021

- Competed on the local and national level in computer science and programming competitions while volunteering to assist and teach members with fundamentals of Computer Science

SKILLS

Technical skills: Java, C++, Python, Figma, Locofy.ai, C, MIPS Assembly, C#, TypeScript, Verilog, JavaScript, React, HTML/CSS, SQL, NoSQL, Erlang, Oz, Haskell, SALSA, Prolog, Lambda Calc., CUDA/MPI, EC2, CI/CD
Software/Tools: Firebase, IBM Qiskit, Jupyter, Matplotlib, Git, Office/Excel, Unity, Scikit-learn, Numpy, Linux, Concurrent/Distributed Prog., Azure, Dataflow Analysis, JUnit, Unix shell, AI/ML, AWS, VMWare, GCP, Docker
Languages: English (native/fluent), Arabic (native/fluent), Spanish (intermediate), Chinese (beginner)