Jon Rosario

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Education

Massachusetts Institute of Technology | Class of 2024

- **Course 18C: Mathematics with Computer Science, Minor in Course 8: Physics**
- SAT: 1530/1600, SAT Math II: 800/800, Current GPA: 4.7
- Relevant Coursework: Linear Algebra & Optimization, Differential Equations, Machine Learning, Applied Discrete Math, Quantum Physics, Fundamentals of Programming, Real Analysis, Matrix Calculus, …
- Current Courses: Quantum Computation, Theory of Computation, Design/Analysis of Algorithms, …

Skills & Interests

Computer Software and Programming

- Python & Julia programming from classes and side projects. These include:
  - Solving PDE computational models using self-taught finite element method and designing ODE models
  - Discord Bot using the Discord API that can scan and detect similarity in images using hash functions
  - Writing algorithms to reverse engineer video game hash functions
  - Many other projects available on GitHub: **https://github.com/triviajon/**
- Familiar with C++ programming
  - Working with NASA JPL meant constant contact and debugging of the currently developed open source library InSAR Scientific Computing Environment 3 (ISCE3)
- Moderate knowledge of design languages such as HTML/CSS/JS. Have fully designed many websites since 2016, including my most recent personal website: **https://triviajon.com/**

Music

- Assistant Music Director, Social Chair, and Baritone singer for Asymptones, an MIT Acapella group.
- Wrote original piano and violin piece that was performed by two members of award-winning trio “Merz Trio”
- Member of the Musical Theatre Guild at MTG, where I take place in musical theatre productions

Leadership & Experience

Summer Internship Program | NASA JPL | 2022

- Completed a full assessment of state-of-the-art software used for processing spaceborne and airborne Interferometric Synthetic Aperture Radar (InSAR) under the mentorship of Gustavo H. X. Shiroma.
- In the process of publishing a peer-reviewed communications letter detailing the analysis and trends found as the main author, and co-authoring a larger journal paper with Shiroma and Franz Meyer, Chief Scientist at the Alaska Satellite Facility

Machine Learning Course Laboratory Assistant | MIT | 2022

- Work one-on-one with students to offer them assistance in learning the fundamentals of machine learning including regression, classification, neural networks, MDPs, and more.
- Attended weekly meetings with other staff where we actively discussed how to enrich the content to optimize the quality of the course

Undergraduate Research with Glaciers Group | MIT | Summer 2021

- Researched and presented methods for analyzing glaciers in Antarctica and created software to efficiently pre-process substantial amounts of radar data for use in machine learning using the collected information.
- Included use of Google Cloud, Python and JavaScript, and the Google Earth Engine API. Work in computer vision and pattern recognition.

Rocket Team Structures™ | MIT | 2020 – 2022 | IT Chair Executive

- Solo project on finite element method analysis of three custom designed aluminum wrenches. Extracted information and presented my findings as a study of the properties of Aluminum 6061-T6.
- Personal duties as IT chair included managing the Apache Subversion server that hosts all of the files needed internally across Rocket Team and supervising the Rocket Team public Wiki page, where information was stored for use by future generations of members.