Aadithyaa Sridharbaskari

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Education

University of California, Davis — Davis, CA
BS in Computer Science and Applied Mathematics (GPA: 3.91) — Expected June 2024

Coursework: Abstract Algebra, Applied Linear Algebra, Object Oriented Programming in C++, Imperative Programming in C, Statistical Mechanics and Relativity, Mathematical Methods in Physics

Experience

QMAP — Davis, CA
Research Intern in Theoretical Physics — January 2022 - Present

- Designed Python API for numerical analysis of multipartite quantum systems for internal use
- Helped implement computational tool for converting graph data structures into random tensor networks
- Refactored existing codebase for tensor reconstruction to improve computational efficency by 5x
- Used machine learning techniques like regression and SVMs to develop computationally efficient ways of measuring entanglement properties among large stochastically generated quantum systems
- Leveraged knowledge in Python, numpy, QuTip, scikit-learn, linear algebra, machine learning

R-Lab — Davis, CA
Research Intern — July 2022 - Present

- Programmed Python simulations of photonic cavity array systems using principles of quantum mechanics to predict experimental behavior
- Developed an interface for computing observables and visualizing plots for simple cavity array systems
- Refactored codebase for compatibility with more complicated inhomogenous cavity systems
- Leveraged knowledge in Python, numpy, QuTip, linear algebra, data visualization

Davis Math Circle — Davis, CA
Instructor and Curriculum Designer — September 2021 - Present

- Developed high quality no-cost math education for children of all ages in the Davis-Sacramento area
- Designed and presented interactive lessons on number theory, combinatorics, and game theory
- Wrote challenging problems in these topics to engage students to think critically

Skills

Programming Languages: (*Proficient*) Python, C++, HTML/CSS, (*Familiar*) Java, React, JS
Technologies: (*Proficient*) numpy, pandas, QuTip,

Projects

BattleShip *C++, CMAKE*
Object oriented implementation of popular board game BattleShip in C++. Utilized Model-View-Controller design pattern to organize codebase. Generated build files using the CMAKE build system.

Credibl *Python, keras, tensorflow*
Recurrent neural network that classified news articles as "fake news" or not using Stanford's *GloVe* algorithm.

Awards

ICPC Northwest Pacific Regional, Top 20 — ACM
Competitive programming contest that tested knowledge on algorithms and mathematical problem solving. 2021

National Debate Tournament Semifinalist — NDCA
Top 4 at a speech and debate tournament among the nation's top public forum debaters. 2021