

AADITHYAA SRIDHARBASKARI

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EDUCATION

University of California, Davis

BS in Computer Science and Applied Mathematics (GPA: 3.91)

Davis, CA

Expected June 2024

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

EXPERIENCE

QMAP

Research Intern in Theoretical Physics

Davis, CA

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 efficiency 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

Research Intern

Davis, CA

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

Instructor and Curriculum Designer

Davis, CA

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 and activities in these topics to engage students to think critically

SKILLS

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

Technologies: (*Proficient*) git, Unix, numpy, pandas, QuTip, (*Familiar*) keras, tensorflow, scikit-learn

PROJECTS

Templated DLL Library C++, CMAKE, Makefile

C++ library that implements a templated double ended queue using the linked list data structure. Implemented DLL as an STL container.

Matrix Multiplication Library C++, CMAKE, Makefile

C++ library that implements standard matrix and vector operations like matrix-vector multiplication and matrix-matrix multiplication. Implemented Matrix and Vector classes as STL containers.

BattleShip C++, CMAKE, Makefile

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

Credibl Python, keras, tensorflow

Recurrent neural network that classified articles as fake or real news using Stanford University's *GloVe* word embeddings.

AWARDS

1st Place App, Dub Hacks SF

Won award for COVID tracking mobile application.

Make School

2020

ICPC Northwest Pacific Regional, Top 20

Competitive programming contest with problems involving algorithms and mathematics.

ACM

2021