Daniel Guo

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EDUCATION

UNIVERSITY OF CALIFORNIA SANTA BARBARA
B.S. in Computer Science
B.S. in Mathematics
Expected June 2022 | GPA: 3.90
College of Creative Studies | Honors

SKILLS

LANGUAGES
Python • C++ • Java • C • LaTeX
LIBRARIES
PyTorch • NumPy • Matplotlib • Flask
Java AWT & Swing • OpenMP & Pthreads
TECHNOLOGIES
Git • Linux • Vim • Jupyter Notebook

COURSEWORK

COMPUTER SCIENCE
Algorithms
Data Structures
Computer Programming & Organization
Machine Learning
Parallel Scientific Computing
Computer Architecture
Automata & Formal Languages
Blockchain & Distributed Ledgers

MATHEMATICS
Discrete Math
Probability & Statistics
Combinatorics
Linear Algebra
Abstract Algebra
Real Analysis
Multivariable Calculus
Differential Equations

GRADUATE COURSES
Logic in Computer Science
Post-Quantum Cryptography

LINKS

Github: github.com/d-guo
LinkedIn: linkedin.com/in/d-guo
Blog: danielguo.dev

PROJECTS

hiwhatsyourname | Flask Web App
- Users create online business cards and can share it with a QR code.
- Implemented backend with Python Flask to process requests and generate a web business card & a QR code using Jinja & qrcode API.
- Project for CalHacks 2020.

2D Laplacian Modeling | Paid Research Project
- Built periodic convolutional neural networks in PyTorch to model the Laplacian differential operator for 2 dimensional functions.
- Used Jupyter Notebook and Matplotlib for neat visualization of training.
- Sponsored by the NSF and SUF fellowship.

GenNet | Genetic Algorithm + Neural Networks
- Implemented architecture & hyperparameter search for neural networks using a genetic algorithm with PyTorch.
- Applied algorithm on MNIST dataset and achieved 96.6% classification accuracy with only a few minutes of training on CPU.

Link Check Bot | Reddit Bot
- Parses Reddit posts and detects broken links.
- Uses praw Reddit API and urllib to get error code from website.

RESEARCH

Data-Driven Learning of Differential Operators | U.G. Researcher
Nov. 2018 – Present | Santa Barbara, CA
Working with Dr. Paul Atzberger in the mathematics department to build neural networks to model differential operators. Gave talk at 2019 RACA conference.

OTHER EXPERIENCE

Teaching Assistant for CS 130B – Algorithms
Jan. 2020 – Mar. 2020 | UC Santa Barbara
Host open lab hours for students to come in and ask for help with homework and programming assignments. Work with professor and TAs to improve class.

Grader/Reader for MATH 8 – Intro. to Higher Math
Jan. 2020 – Mar. 2020 | UC Santa Barbara
Grade homework and offer feedback to students in Math 8.

College of Creative Studies Community Council Officer
Nov. 2019 – Present | UC Santa Barbara
Plan events for CCS students. Cohosted the first CCS Integration Bee.

AWARDS & ACTIVITIES

2020	UCSB SciOly Fermi & Code Busters Event Supervisor
2018	Top 35% in Putnam Mathematics Competition
2018	Ohlone Certificate of Accomplishment in Pure Mathematics
2018	Lockheed Martin CodeQuest & Stanford ProCo Coding Competitions