

DANIEL GUO

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EDUCATION

University of California Santa Barbara | CCS Honors
B.S. Computer Science, B.S. Mathematics

Sep. 2018 – June 2022
GPA: 3.93/4.00

EXPERIENCE

Semiotic AI | Research and Development Intern

June 2020 – Present

- Completed encrypted neural network for detecting fraudulent credit card transactions and increased F1 score from 56% to 86% on 275,000+ sample dataset using data normalization and standardization techniques.
- Achieved nearly state of the art performance for diagnosing heart conditions with an encrypted neural network.
- Built automated tool to convert ONNX models into an internal graph representation with additional functionality.
- Developed Python library add-on to PyTorch for the development of encrypted neural networks.
- Researched and read papers on FHE and private AI which led to experimental performance and efficiency gains.

Atzberger Research Group | Undergraduate Researcher

Nov. 2018 – Present

- Gave talk at 2019 RACA conference about CNNs for the Laplacian in 2D. Won 2019 SUF Research Grant.
- Building convolutional neural networks in PyTorch to learn differential operators from raw and simulation data.

CS130B Teaching Assistant | Algorithms and Data Structures

Jan. 2020 – Mar. 2020

- Held discussions and office hours to reinforce students' understanding of algorithms and data structures.
- Created and graded homework and exams. Provided students with timely feedback.

PROJECTS

hiwhatsyourname | Python, Flask, SQL-Alchemy, Jinja2, HTML5, CSS3, QR code, GCP App Engine

- Deployed web app on Google Cloud where users can create virtual business cards to be shared with a QR code.

Trading Bot | Python, Requests, Alpaca Web API, Microsoft Azure Function

- Deployed algorithmic trading bot with Azure Function to discover market trends and place orders twice a day.
- Beat market by 7.12% in 30 days between Aug. 20 – Sep. 20 (since deployment).

GenNet | Python, PyTorch

- Created genetic algorithm to optimize neural network architecture and hyperparameters for training in PyTorch.
- Achieved over 96.6% accuracy on MNIST (70,000 samples of handwritten digits) in under 2 minutes of training.

talkie | C

- Implemented Regev's public key encryption using TCP sockets to send encrypted messages with command line.

SKILLS

Languages

Proficient: Python, LaTeX

Familiar with: C++, C, C#, Java, Javascript, HTML, CSS

Frameworks and Libraries

PyTorch, Flask, Scikit-Learn, NumPy, Pandas, Matplotlib, Alpaca

Technologies

Git, Bash, Vim, Jupyter, Google Colab, Google Cloud, Microsoft Azure

OTHER INVOLVEMENTS

SB Hacks VII Organizer - Sponsorships Coordinator

2020 – Present

CLAS Math Tutor

2020 – Present

CCS Computing Mentor

2019 – Present

UCSB Science Olympiad Fermi and Code Busters Event Supervisor

2019, 2020

Top 35% Putnam Math Competition

2018

Programming competitions: CodeQuest by Lockheed Martin, ProCo by Stanford University

2018