# DANIEL GUO

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## EDUCATION

**University of California Santa Barbara |** CCS Honors — Sep. 2018 – June 2022
B.S. Computer Science, B.S. Mathematics — 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 Resarch 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

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| **Languages** | Proficient: Python, LaTeX<br>Familiar: 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