

# Zach Zhao

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## EDUCATION

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### University of Maryland, College Park – Maryland, USA

September 2020 - Present

Bachelor of Science, Computer Science and Finance; Cumulative GPA: 3.98/4.0

Banneker Keys Scholar (Full Ride), Honors College, Advanced Cybersecurity Experience for Students (ACES)

**Relevant Coursework:** Organization of Programming Languages, Algorithms, Machine Learning, Statistics, Data Science, Financial Accounting, Managerial Accounting, Business Finance, Business Law

## QUALIFICATIONS

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**Programming:** Python, Java, Javascript, OCaml, Ruby, C, HTML, CSS, SQL, Bash

**Technologies:** Git, PyTorch, SciPy, Pandas, Flask, SQLite, React, React Native, MongoDB, Express, NodeJS

## EXPERIENCE

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### Shellter

Software Engineer

January 2021 – Present

- Lead developer of a React Native application for college course chats with over 150 daily active users
- Designed a NoSQL Firebase database for storing user data and chat room messages

### University of Maryland, College Park

Researcher

October 2020 – Present

- Research mixed-integer programming and greedy algorithms (Python) to optimize contract tracing
- Used AWS EC2 instances to execute experiments on COVID-19 social graphs with over 150,000+ contacts

### University of Maryland, College Park

Researcher

April 2019 - March 2020

- Applied novel deep learning techniques to optimize kidney exchanges under Prof. John Dickerson
- Trained graph neural networks on over 100,000 sampled kidney exchange graphs, obtaining 92% optimality

## PROJECTS

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### BreachPrice

Lead Developer

March 2020

- Used 800 breach events and 160,000 stock prices to analyze impact of cyber breaches on corporations
- Developed a regression-based market model to estimate abnormal returns due to cyber breaches.

### Flashable

Co-Developer

March 2020

- Leveraged transformer models (natural language processing) to generate study cards from text.
- Implemented Python FastAPI backend to serve HuggingFace Transformer models

### Go Kitty Go! An ASL Fingerspelling Game

Co-Developer

April 2020

- Developed an interactive game with PhaserJS to teach users ASL Fingerspelling
- Used Google MediaPipe to track user hand movements in real time.

## AWARDS AND PUBLICATIONS

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Zeyu Zhao, John Dickerson (2020). [Clearing Kidney Exchanges via Graph Neural Network Guided Tree Search](#). In: Conference on Artificial Intelligence (AAAI)

Haddadan, A., Li, A., Li, G., Zhao, Z., Marathe, M., Srinivasan, A., & Vullikanti, A. (n.d.). A Markov Decision Framework for Efficient Contact Tracing and Isolation. Under review for NeurIPS

[Regeneron Science Talent Search Scholar](#)

January 2020

[ACM/CSTA Cutler-Bell Prize Winner](#)

January 2020

USACO Platinum Division

November 2019

## WORKING PAPERS

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Li, A., Li, G., Zhao, Z., Marathe, M., Srinivasan, A., & Vullikanti, A. (n.d.). A Robust Optimization Approach to Contact Tracing.

Li, A., Li, G., Nguyen, D., Zhao, Z., Srinivasan, A., Tandon, R., & Vullikanti, A. (n.d.). Private Algorithms for Controlling Epidemic Spread.