

# Yixuan Zhou

Hungry Learner / Dedicated Team Player / Empowering Leader

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## EDUCATION

### University of California, San Diego

Major GPA: **4.0/4.0** Overall GPA: **3.98/4.0**

- Anticipated June 2022.
- **Double Major** in **Computer Science** and **Mathematics-Probability and Statistics**.

## SKILLS

- Programming Languages:
  - **Proficient:** Python, Java, C/C++.
  - **Familiar:** Matlab, Bash scripting, HTML/CSS/Javascript, ARM, System Verilog.
- Language Proficiency: Chinese, English.
- Other: Ultimate Frisbee!

## EXPERIENCES

### Training Analyst Golden Set Analytics

Jan. 2021 - Present

- Designing and implementing Markov process to model tennis games and predict results.
- Exploring and introducing different weighting parameters on each state of the Markov chain to improve the comprehensiveness of the model.
- Performing Bayesian updates based on the Beta distribution of the transition probabilities to further improve the predictive accuracy of the model.

### Undergrad Researcher UCSD Department of Math

June 2020 - Sept. 2020

- Worked with Professor Jonathan Novak in the field of random matrix theory.
- Composed reports introducing the construction of Brownian motion through a properly scaled random walk to analysis of Dyson Brownian motion.

### Head Tutor UCSD Department of CSE

Apr. 2019 - Present

- Undergrad teaching assistance for CSE 12 (Basic Data Structure) with Professor Gary Gillespie.
- Managing over 50 staff members, including leading the staff meetings and organizing assignments gradings.
- Redesigning and recreating the course assignments with Professor Gillespie.
- Holding tutor hours to explain terminologies and to demonstrate behaviors of data structures to students.

## PROJECTS

### UCSD Math Honor Program Researcher

Jan. 2021 - Present

Polynomial Optimization, Python

- Writing a thesis investigating the stability of the linear systems generated when certifying the nonnegativity of polynomial under the supervision of Professor Mareike Dressler.
- Writing Python programs to perform numerical experiments to test the condition number of the linear system when generated using different polynomial bases.

### Project Limbi[t]less Researcher

Oct. 2020 - Present

Python, PyTorch

- Working at the UCSD Center of Human Frontiers Lab to perform background removal with deep learning.
- Employing transfer learning techniques to repurpose the DeepLab neural network for the task of segmenting amputee's limbs from the raw image input.
- Performing various data augmentation techniques to enlarge the original dataset.

### Autograder Backend Lead Developer

Sept. 2019 - Present

Python, Flask, PostgreSQL, Docker

- Serving as backend lead in autograder team ([autograder.ucsd.edu](http://autograder.ucsd.edu)), a service used by 2000+ UCSD students and professors to facilitate student-tutor queue.
- Redesigning the relational database and reconstructing the website's backend to migrate to modern technologies so that it is up to date and easy to maintain.

## AWARD

### Champion of Beginner's Programming Competition

June 2019

- Solved 15 programming tasks under 2.5 hours on Hackerrank in a team of two.
- Won 1st place in the 100-team competition.