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 Graduation Time: June 2022.
- **Double Major** in **Computer Science** and **Mathematics-Probability and Statistics**.

SKILLS

- **Programming Languages**:
  - Proficient: Python, C#, Java, SQL, C++, C, SQL.
  - Familiar: HTML/CSS/JavaScript, Matlab, Bash scripting, ARM, System Verilog.
- **Languages**: English, Mandarin.
- **Others**: Ultimate Frisbee!

EXPERIENCES

Software Engineer Intern Bentley Systems   Jun. 2021 - Sept. 2021

C#, Orleans, RabbitMQ

- Working in the Simulacra team to redesign the distributed system to make the software more scalable.
- Restructuring the in-memory data management system for faster querying and lighter memory usage.
- Optimizing clustering algorithms for the "rendering physical items on the map" feature to run *1000*x faster.

Training Analyst Golden Set Analytics   Jan. 2021 - Jun. 2021

Python, Pandas, Numpy

- Designed and implemented Markov process to model tennis games and to predict results.
- Explored and introduced different weight functions on each state of the Markov chain to improve the comprehensiveness of the model.
- Implemented Bayesian updates on the transition probabilities to further improve the predictive accuracy.

Head Tutor UCSD Department of CSE   Apr. 2019 - Dec. 2021

Java, C, C++

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

PROJECTS

Autograder Backend Lead Developer   Sept. 2019 - Present

Python, Flask, PostgreSQL, Docker

- Serving as backend lead in autograder team (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.

Project Limbi[t]less Researcher   Oct. 2020 - Present

Python, PyTorch, Numpy

- 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.

UCSD Math Honor Program Researcher   Jan. 2021 - Present

Python, Polynomial Optimization

- Writing a thesis investigating the stability of the linear systems generated when certificating 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.

AWARD

UCSD Physical Sciences Dean's Undergraduate Award for Excellence Nov. 2021

- Being one of the 26 recipients out of 4000 undergraduate students in the physical sciences department that are recognized for academic excellence.

Champion of Beginner's Programming Competition   June 2019

- Won 1st place in the 100-team competition for solving 15 Hackerrank problems in 2.5 hours.