William Lin

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EDUCATION

University of California, Berkeley
Electrical Engineering and Computer Science M.S. **May. 2024**
Advised by Professor Satish Rao
Electrical Engineering and Computer Science B.S with Mathematics minor **May. 2023**
Regents & Chancellor's Scholarship, Eta Kappa Nu, Graduated with High Honors
GPA: 3.95, Technical GPA: 4.00

WORK EXPERIENCE

EECS Department Course Staff Jun. 2020 - Dec. 2022
CS70 UnderGraduate Student Instructor (Jan. 2021 - Dec. 2021), CS70 Reader (Jun. 2020 - Dec. 2020)
CS172 Reader (Jan. 2022 - May. 2022), CS176 Reader (Aug. 2022 - Dec. 2022)

- Teaching discussions sessions of up to 30 students twice a week on discrete math and probability
- Holding office hours to assist students with learning course material

Stottler Henke Associates Inc Jun. 2022 - Aug. 2022
Artificial Intelligence Developer Intern

- Was the main designer of a framework for applying artificial intelligence techniques to coordinate swarms of drones, and built example systems for
- Worked on modernizing Satellite Scheduling System and making it available in linux for easier containerization and easier cloud deployment

Research Sep. 2021 - Present
Graduated Studies Advised by Professor Satish Rao

- Working with Professor Rao on researching faster polynomial time algorithms for the Max Flow problem, simplifying recent almost linear time result, and designing improved algorithms for expander decomposition

SELECTED PROJECTS

End-to-End Encrypted File Sharing System (Golang) Nov 2020

- Designed file sharing system supporting uploading, appending, sharing, and deleting files
- Implemented encryption system for file/user data using AES-CBC, and RSA, as well as error/modification detection to files using HMACs

Approximation to Modified Version of Dominating Set (Python) May 2020

- Invented polynomial time approximation algorithm for NP-complete problem dominating set, with provable bounds improved by self made heuristics.

Optimality for Sum of Squares Semidefinite Programming Dec 2022

- Research Survey Paper introducing Sum of Squares semidefinite programs and their applications and implications for approximation algorithm optimality.

Reinforcement Learning for Image Generation Sept 2023

- Reinforcement learning project focusing on applying denoising through diffusion models to force image generated to better match prompt

SKILLS

Languages: Java, Python, C, Assembly (RISC V), HTML, CSS, Scheme, MATLAB, Golang
Research Interests: Algorithms, Sum of Squares Programming, Optimization, Machine Learning