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 in CS Theory with a concentration in Algorithms
Thesis: Expander Flows and Sparsest Cut Linear Programming
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 a deeper understanding of course material

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

- Main designer of a framework for applying artificial intelligence techniques to coordinate swarms of drones, and built example systems for simulating them.
- Worked on modernizing Satellite Scheduling System and making it available in Linux for containerization and cloud deployment

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

- Currently working with Professor Satish Rao on analysis of the capacity releasing diffusion algorithm for local cut conductance. Previous research worked on efficient algorithms for global cut conductance related to 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

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

Methods of Bayesian Inverse Reinforcement Learning Dec 2023

- Research Survey Paper analysis of three prominent Bayesian Inverse Reinforcement Learning algorithms with experimental results for comparison

RESEARCH INTEREST

Algorithms, Complexity Theory, Machine Learning, Reinforcement Learning, Language Models