Chung-En Tsai

Office: R407, Der-Tien Hall, National Taiwan University, Taipei, Taiwan
Email: chungentsai@ntu.edu.tw
Links: Personal website, Google scholar, Github, LinkedIn

RESEARCH INTERESTS

Machine learning theory; Mathematical optimization.

EDUCATION

National Taiwan University (NTU), Taipei, Taiwan — Sep 2019 — Jun 2023
B.S. in Computer Science and Information Engineering (CSIE) — GPA: 4.23/4.30, Rank: 5/123

EMPLOYMENT

Laboratory of Learning Theory and Optimization Methods, NTU — Taipei, Taiwan
Research Assistant — Sep 2021 — Jul 2024
Teaching Assistant of CSIE5410: Optimization Algorithms — Feb 2024 — Jun 2024
Teaching Assistant of CSIE5062: Online Convex Optimization — Sep 2023 — Dec 2023
Teaching Assistant of CSIE5002: Prediction, Learning, and Games — Feb 2023 — Jun 2023
Advisor: Prof. Yen-Huan Li

Mathematics Division, National Center for Theoretical Sciences — Taipei, Taiwan
Undergraduate Research Assistant — Sep 2022 — Jun 2023
Advisor: Prof. Chun-Hsiung Hsia

Institute of Information Science, Academia Sinica — Taipei, Taiwan
Summer Research Intern — Jul 2022 — Aug 2022
Advisor: Prof. Kai-Min Chung

RESEARCH PAPERS

[1] Chung-En Tsai, Hao-Chung Cheng, and Yen-Huan Li. Online self-concordant and relatively smooth minimization, with applications to online portfolio selection and learning quantum states. In *Proc. 34th Int. Conf. Algorithmic Learning Theory (ALT)*, pages 1481–1483, 2023.

[2] Chung-En Tsai, Hao-Chung Cheng, and Yen-Huan Li. Faster stochastic first-order method for maximum-likelihood quantum state tomography. In *Int. Conf. Quantum Information Processing (QIP)*, 2023.

[3] Chung-En Tsai, Ying-Ting Lin, and Yen-Huan Li. Data-dependent bounds for online portfolio selection without Lipschitzness and smoothness. In *Adv. Neural Information Processing Systems (NeurIPS)*, 2023.

[4] Chung-En Tsai, Hao-Chung Cheng, and Yen-Huan Li. Fast minimization of expected logarithmic loss via stochastic dual averaging. In *Int. Conf. Artificial Intelligence and Statistics (AISTATS)*, 2024.

[5] Guan-Ren Wang, Chung-En Tsai, Hao-Chung Cheng, and Yen-Huan Li. Computing Augustin information via hybrid geodesically convex optimization. In *IEEE Int. Symp. Information Theory (ISIT)*, 2024.

[6] Chun-Hsiung Hsia and Chung-En Tsai. On the synchronization analysis of a strong competition Kuramoto model. *arXiv preprint*, 2024.

TALKS

The 34th International Conference on Algorithmic Learning Theory — Singapore, Singapore
Online self-concordant and relatively smooth minimization with applications to online portfolio selection and learning quantum states — Feb 2023

Trends in AI Theory Seminar Series — MediaTek Research
Data-dependent bounds for online portfolio selection without Lipschitzness and smoothness. — Aug 2023

Learning quantum states with the log-loss. Jan 2023
Online portfolio selection and online entropic mirror descent. Jun 2022

POSTER PRESENTATIONS

The 27th International Conference on Artificial Intelligence and Statistics Valencia, Spain
Fast minimization of expected logarithmic loss via stochastic dual averaging. May 2024

Workshop on Nonsmooth Optimization and Applications Antwerp, Belgium
Data-dependent bounds for online portfolio selection without Lipschitzness and smoothness. Apr 2024

The 59th Annual Meeting of the Taiwanese Mathematical Society Taipei, Taiwan
Synchronization of Kuramoto model beyond sinusoidal interactions. Jan 2024

The 27th Conference on Quantum Information Processing Taipei, Taiwan
Improved dimension and sample size scalability Jan 2024
for maximum-likelihood state tomography and approximating PSD permanents.

The 37th Conference on Neural Information Processing Systems New Orleans, USA
Data-dependent bounds for online portfolio selection without Lipschitzness and smoothness. Dec 2023

AWARDS

The Mathematical Society of the Republic of China Taipei, Taiwan
Outstanding Paper Award Jan 2024

Department of CSIE, NTU Taipei, Taiwan
Appier's Research Award Jul 2023
Undergraduate Research Award Jul 2022, Jul 2023
Dean's List Jul 2020, Dec 2022

OTHER EXPERIENCES

The 2023 IEEE International Symposium on Information Theory Taipei, Taiwan
Volunteer Jun 2023

The 43rd and 44th NTU CSIE Student Council Taipei, Taiwan
Minister of the Academic Department Aug 2021 — Jul 2022
Member of the Academic Department Aug 2020 — Jul 2021