

# Chung-En Tsai

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Links: Personal website, Google scholar, Github, LinkedIn

## RESEARCH INTERESTS

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Learning theory, continuous and discrete optimization, and numerical analysis.

## EDUCATION

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

## EMPLOYMENT

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

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

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

## RESEARCH PAPERS

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- [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. *arXiv preprint*, 2024.

## TALKS

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

<b>Trends in AI Theory Seminar Series</b>	MediaTek Research
<i>Data-dependent bounds for online portfolio selection without Lipschitzness and smoothness.</i>	Aug 2023
<i>Learning quantum states with the log-loss.</i>	Jan 2023
<i>Online portfolio selection and online entropic mirror descent.</i>	Jun 2022

## POSTER PRESENTATIONS

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<b>The 27th International Conference on Artificial Intelligence and Statistics</b> <i>Fast minimization of expected logarithmic loss via stochastic dual averaging.</i>	Valencia, Spain May 2024
<b>Workshop on Nonsmooth Optimization and Applications</b> <i>Data-dependent bounds for online portfolio selection without Lipschitzness and smoothness.</i>	Antwerp, Belgium Apr 2024
<b>The 59th Annual Meeting of the Taiwanese Mathematical Society</b> <i>Synchronization of Kuramoto model beyond sinusoidal interactions.</i>	Taipei, Taiwan Jan 2024
<b>The 27th Conference on Quantum Information Processing</b> <i>Improved dimension and sample size scalability for maximum-likelihood state tomography and approximating PSD permanents.</i>	Taipei, Taiwan Jan 2024
<b>The 37th Conference on Neural Information Processing Systems</b> <i>Data-dependent bounds for online portfolio selection without Lipschitzness and smoothness.</i>	New Orleans, USA Dec 2023

## AWARDS

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<b>The Mathematical Society of the Republic of China</b> <i>Outstanding Paper Award</i>	Taipei, Taiwan Jan 2024
<b>Department of CSIE, NTU</b> <i>Undergraduate Research Award</i> <i>Dean's List</i>	Taipei, Taiwan Jul 2022, Jul 2023 Jul 2020, Dec 2022

## OTHER EXPERIENCES

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<b>The 2023 IEEE international Symposium on Information Theory</b> <i>Volunteer</i>	Taipei, Taiwan Jun 2023
<b>The 43rd and 44th NTU CSIE Student Council</b> Minister of the Academic Department Member of the Academic Department	Taipei, Taiwan Aug 2021 — Jul 2022 Aug 2020 — Jul 2021