

Wei-Cheng Lee

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Optimization · Online Learning · Reinforcement Learning (Theory & Algorithms)

EDUCATION

King Abdullah University of Science and Technology (KAUST)

Dec. 2025 – Present

Ph.D. Student in Computer Science

King Abdullah University of Science and Technology (KAUST)

Aug. 2024 – Dec. 2025

M.Sc. in Computer Science

- Selected Coursework: *Computing Systems and Concurrency, Computer Vision, High-Performance Computing, Numerical Methods for Stochastic Differential Equations, Online Learning, Database Systems.*
- Research Focus: Finite-time and high-probability analysis for temporal-difference learning under Markovian data, as well as lower bounds for stochastic optimization.

National Taiwan University

Sep. 2012 – Jan. 2018

B.Sc. in Computer Science, Minor in Mathematics

- Selected Coursework: *Data Structures and Algorithms, Algorithm Design and Analysis, Real Analysis, Abstract Algebra, Linear Algebra, Probability Theory, Numerical Methods*
- Research Focus: Binary Matrix Factorization and Generalized Mixed Regression.

SELECTED PUBLICATIONS

A Finite-Time Analysis of TD Learning with Linear Function Approximation without Projections nor Strong Convexity

arXiv

- Wei-Cheng Lee, Francesco Orabona. *arXiv preprint*.

New Lower Bounds for Stochastic Non-Convex Optimization through Divergence Composition

COLT 2025

- El Mehdi Saad, Wei-Cheng Lee, Francesco Orabona. *Conference on Learning Theory*, 2025.

MixLasso: Generalized Mixed Regression via Convex Atomic-Norm Regularization

NeurIPS 2018

- Ian E.H. Yen, Wei-Cheng Lee, Kai Zhong, Sung-En Chang, Pradeep Ravikumar, Shou-De Lin. *Advances in Neural Information Processing Systems*, 2018.

Latent Feature Lasso

ICML 2017

- Ian E.H. Yen, Wei-Cheng Lee, Sung-En Chang, Arun S. Suggala, Shou-De Lin, Pradeep Ravikumar. *International Conference on Machine Learning*, 2017.

EXPERIENCE

Saudi Aramco, Research & Development Center

Jun. 2025 – Jul. 2025

Graduate Internship Program

Saudi Arabia

- Developed and solved a Gas Oil Separation Plant (GOSP) network optimization problem as a mixed-integer nonlinear program (MINLP) in Pyomo, and performed scalability analysis across different network configurations.
- Enhanced Pyomo's core by modifying its source code to integrate JAX and finite-difference methods for high-performance computation of gradients, Jacobians, and Hessians.

Institute of Information Science, Academia Sinica

Feb. 2022 – Mar. 2024

Research Assistant

Taipei, Taiwan

- Studied regret guarantees for online reinforcement learning algorithms in infinite-horizon average reward MDPs with full-information feedback.
- Developed an alternative analysis technique based on an entropic linear program (instead of Tsallis entropy) to show that the Hedge algorithm works in both stochastic and adversarial settings.

Graduate Institute of Biomedical Electronics and Bioinformatics, NTU

Aug. 2021 – Jan. 2022

Research Assistant

Taipei, Taiwan

- Applied BERT-based language models to automatically transform clinical cases into ICD-10 codes for medical insurance applications.

Graduate Research, National Taiwan University

Feb. 2018 – Jun. 2021

M.Sc. Student

Taipei, Taiwan

- Derived new algorithms for log-loss function class, with a focus on Online Portfolio Selection problem.

HONOURS & AWARDS

Presidential Award, National Taiwan University

Spring 2014, Fall 2012

- Awarded to the top 5% of students each semester.

TEACHING EXPERIENCE

Reinforcement Learning, KAUST

Spring 2025

- Teaching Assistant.

Optimization Algorithms, National Taiwan University

Fall 2019, Fall 2018

- Teaching Assistant.

Probability, National Taiwan University

Spring 2018, Spring 2015

- Teaching Assistant.

TECHNICAL STACK

Programming

C/C++, Python (PyTorch, JAX), MATLAB, Julia, Go, JavaScript