Wei-Cheng Lee

KAUST 1st year MS/PhD in Computer Science   weicheng.lee.frank@gmail.com

[Personal Website](#) (For the most recent version)

Research Interest
- Optimization, Online Learning and Reinforcement Learning

Education

- **MS/PhD**, Computer Science, King Abdullah University of Science and Technology   Aug 2024 – Present
  GPA: 4.0/4.0 *(Computing Systems and Concurrency, Numerical Methods/SDE, Online Learning, Data Analytics)*

- **Graduate Work**, Computer Science, National Taiwan University   Feb 2018 – June 2021
  A^+: *Optimization Algorithms*   A: *Prediction, Learning, and Games*

- **Bachelor of Science**, Computer Science (Mathematics), National Taiwan University   Sep 2012 – Jan 2018
  A^+: *Analysis, Algebra, Linear Algebra, Probability, Numerical Methods, and Measure Theory*

Publications

[1] Ian E.H. Yen, **Wei-Cheng Lee**, Kai Zhong, Sung-En Chang, Pradeep Ravikumar, and Shou-De Lin, "*MixLasso: Generalized Mixed Regression via Convex Atomic-Norm Regularization*". In Advances in Neural Information Processing Systems (NeurIPS), 2018

[2] Ian E.H. Yen, **Wei-Cheng Lee**, Sung-En Chang, Arun S. Suggala, Shou-De Lin and Pradeep Ravikumar, "*Latent Feature Lasso*". In International Conference on Machine Learning (ICML), 2017

[3] El Mehdi Saad, **Wei-Cheng Lee**, Francesco Orabona, "*New Lower Bounds for Stochastic Non-Convex Optimization through Divergence Composition*". (arXiv)

Research Experience

- Lower bounds on non-convex Stochastic Optimization   Advisor: Prof. Francesco Orabona
  Position: MS/PhD student   Aug. 2024 – present
  - Proving matching upper bounds of SGD under RSI and strongly quasar-convex conditions.
  - Proving strong separation of RSI and EB.
  - Engage in proving lower bounds on RSI and strongly quasar-convex conditions.

- Online Reinforcement learning algorithms   Advisor: Prof. Chi-Jen Lu
  Position: Research Assistant, Academia Sinica, Taiwan   Feb. 2022 – March. 2024
  - Propose an alternative technique based on an entropic linear program instead of Tsallis entropy to prove the Hedge algorithm works for stochastic and adversarial settings in an infinite horizon average reward MDP with full information feedback.

- Latent feature models   Advisor: Prof. Shou-De Lin
  Position: Undergraduate Student, National Taiwan University, Taiwan   Sep. 2016 – Sep. 2018
  - Compare different latent models such as tensor decomposition, variational inference, and combinatorial methods. Show its ability from theory and experiment to handle large hidden dimensions and no assumptions on data distribution.
  - Propose the correct Lagrangian formulation of the Latent feature model objective.
  - Extend our matrix factorization techniques to a Generalized Linear Model setup and use it to denoise large-scale stock data.

Work Experience

- Research Assistant   Feb. 2022 – 2024 March
  Institute of Information Science, Academia Sinica
  - Proving regret guarantees of online reinforcement learning algorithms

- Research Assistant   Aug. 2021 – 2022 Jan
  Graduate Institute of Biomedical Electronics and Bioinformatics National Taiwan University
  - Using a language model to automatically transform cases into ICD10 for medical insurance

Honours and Awards

- Presidential Award, National Taiwan University (Awarded to the 5%)   Spring 2014, Fall 2012

TA Experience

- Reinforcement Learning, KAUST   Spring 2025
- Optimization Algorithms, National Taiwan University   Fall 2019, Fall 2018
- Probability, National Taiwan University   Spring 2018, Spring 2015

Skills

- Programming   C/C++, Python(Pytorch), MATLAB, Julia, Go
- Language   English, Chinese