Chen-Yu **Wei**

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Education

University of Southern California   *Los Angeles, CA*
Ph.D. in Computer Science   *2017 – 2022*
Supervisor: Haipeng Luo

National Taiwan University   *Taipei, Taiwan*
M.S. in Communication Engineering   *2013 – 2015*
Supervisor: Wanjiun Liao

National Taiwan University   *Taipei, Taiwan*
B.S. in Electrical Engineering   *2008 – 2012*

Research Experience

Simons Institute   *Berkeley, CA*
Research Fellow   *Fall 2022*
Data-Driven Decision Processes

Simons Institute   *Berkeley, CA*
Student Visitor   *Spring 2022*
Learning and Games

Google Research   *Virtual*
Research Intern   *Summer 2021*
Supervisor: Christoph Dann, Julian Zimmert
Robustness against Corruption

Simons Institute   *Virtual*
Student Visitor   *Fall 2020*
Theory of Reinforcement Learning

Microsoft Research   *Redmond, WA*
Research Intern   *Summer 2019*
Supervisor: Alekh Agarwal, John Langford
Personalized Federated Learning

Yahoo Research   *New York City, NY*
Research Intern   *Summer 2018*
Supervisor: Alina Beygelzimer, Dávid Pál, Balázs Szörényi
Bandit Classification

Academia Sinica   *Taipei, Taiwan*
Research Assistant   *2015 – 2017*
Supervisor: Chi-Jen Lu
Online Learning

Academia Sinica   *Taipei, Taiwan*
Research Intern   *Spring 2012*
Supervisor: Yi-Hsuan Yang
Music Information Retrieval

Stanford University   *Palo Alto, CA*
Research Intern (Undergraduate Visiting Research (UGVR) Program)   *Summer 2011*
Supervisor: Boris Murmann
Circuit Design for Medical Ultrasound

Honors & Awards

2022 **Top Reviewers,** NeurIPS

2022 **Prize for Excellence in Research with a Substantial Mathematical Component,** Center for Applied Mathematical Science, USC

2022 **Simons-Berkeley Research Fellowship,** Simons Institute for the Theory of Computing

2022 **Best Paper Award,** International Conference on Algorithmic Learning Theory

2021 **Best Paper Award,** Conference on Learning Theory

2020 **Best Research Assistant Award,** Computer Science Department, USC

2019 **Best Poster Award,** SoCal Machine Learning Symposium

2017 **Taiwan-USC Scholarship,** Ministry of Education, Taiwan

2010 **Tenth Place,** ACM International Collegiate Programming Contest – Asia Regional

Publications

Conference Papers (* indicates equal contribution or alphabetical ordering)

Independent Policy Gradient for Large-Scale Markov Potential Games: Sharper Rates, Function Approximation, and Game-Agnostic Convergence (Long talk)
Dongsheng Ding*, Chen-Yu Wei*, Kaiqing Zhang*, Mihailo Jovanovic
ICML 2022

Personalization Improves Privacy-Accuracy Tradeoffs in Federated Optimization
Alberto Bietti, Chen-Yu Wei, Miroslav Dudik, John Langford, Zhiwei Steven Wu
ICML 2022

A Model Selection Approach for Corruption Robust Reinforcement Learning (Best Paper Award)
Chen-Yu Wei, Christoph Dann, Julian Zimmert
ALT 2022

Decentralized Cooperative Reinforcement Learning with Hierarchical Information Structure
Hsu Kao, Chen-Yu Wei, Vijay Subramanian
ALT 2022

Policy Optimization in Adversarial MDPs: Improved Exploration via Dilated Bonuses
Haipeng Luo*, Chen-Yu Wei*, Chung-Wei Lee
NeurIPS 2021

Achieving Near Instance-Optimality and Minimax-Optimality in Stochastic and Adversarial Linear Bandits Simultaneously
Chung-Wei Lee*, Haipeng Luo*, Chen-Yu Wei*, Mengxiao Zhang*, Xiaojin Zhang*
ICML 2021

Non-stationary RL without Prior Knowledge: An Optimal Black-box Approach (Best Paper Award)
Chen-Yu Wei, Haipeng Luo
COLT 2021

Last-iterate Convergence of Decentralized Optimistic Gradient Descent/Ascent in Infinite-horizon Competitive Markov Games
Chen-Yu Wei, Chung-Wei Lee, Mengxiao Zhang, Haipeng Luo
COLT 2021

Impossible Tuning Made Possible: A New Expert Algorithm and Its Applications
Liyu Chen*, Haipeng Luo*, Chen-Yu Wei*
COLT 2021

Minimax Regret for Stochastic Shortest Path with Adversarial Costs and Known Transition
Liyu Chen, Haipeng Luo, Chen-Yu Wei
COLT 2021

Learning Infinite-horizon Average-reward MDPs with Linear Function Approximation
Chen-Yu Wei, Mehdi Jafarnia-Jahromi, Haipeng Luo, Rahul Jain
AISTAT 2021

Linear Last-iterate Convergence for Constrained Saddle-point Optimization
Chen-Yu Wei, Chung-Wei Lee, Mengxiao Zhang, Haipeng Luo
ICLR 2021

Adversarial Online Learning with Changing Action Sets: Efficient Algorithms with Approximate Regret Bounds
Ehsan Emamjomeh-Zadeh*, Chen-Yu Wei*, Haipeng Luo, David Kempe
ALT 2021

Bias No More: High-probability Data-dependent Regret Bounds for Adversarial Bandits and MDPs (Oral)
Chung-Wei Lee*, Haipeng Luo*, Chen-Yu Wei*, Mengxiao Zhang*
NeurIPS 2020

Taking a Hint: How to Leverage Loss Predictors in Contextual Bandits?
Chen-Yu Wei, Haipeng Luo, Alekh Agarwal
COLT 2020

Model-free Reinforcement Learning in Infinite-horizon Average-reward Markov Decision Processes
Chen-Yu Wei, Mehdi Jafarnia-Jahromi, Haipeng Luo, Hiteshi Sharma, Rahul Jain
ICML 2020

A New Algorithm for Non-stationary Contextual Bandits: Efficient, Optimal, and Parameter-free
Yifang Chen*, Chung-Wei Lee*, Haipeng Luo*, Chen-Yu Wei*
COLT 2019

Improved Path-length Regret Bounds for Bandits   *COLT 2019*
Sébastien Bubeck*, Yuanzhi Li*, Haipeng Luo*, Chen-Yu Wei*

Bandit Multiclass Linear Classification: Efficient Algorithms for the Separable Case   *ICML 2019*
Alina Beygelzimer*, Dávid Pál*, Balázs Szörényi*, Devanathan Thiruvenkatachari*, Chen-Yu Wei*, Chicheng Zhang*

Beating Stochastic and Adversarial Semi-bandits Optimally and Simultaneously (Long talk)   *ICML 2019*
Julian Zimmert, Haipeng Luo, Chen-Yu Wei

Efficient Online Portfolio with Logarithmic Regret (Spotlight)   *NeurIPS 2018*
Haipeng Luo*, Chen-Yu Wei*, Kai Zheng*

More Adaptive Algorithms for Adversarial Bandits   *COLT 2018*
Chen-Yu Wei, Haipeng Luo

Efficient Contextual Bandits in Non-stationary Worlds   *COLT 2018*
Haipeng Luo*, Chen-Yu Wei*, Alekh Agarwal, John Langford

Online Reinforcement Learning in Stochastic Games   *NeurIPS 2017*
Chen-Yu Wei, Yi-Te Hong, Chi-Jen Lu

Tracking the Best Expert in Non-stationary Stochastic Environments   *NeurIPS 2016*
Chen-Yu Wei, Yi-Te Hong, Chi-Jen Lu

Workshop Papers

Federated Residual Learning
NeurIPS Workshop on Scalability, Privacy, and Security in Federated Learning (Spicy-FL), 2020
Chen-Yu Wei, Alekh Agarwal, John Langford

Analyzing the Variance of Policy Gradient Estimators for the Linear-Quadratic Regulator
NeurIPS Workshop on Optimization Foundations for Reinforcement Learning (OPTRL), 2019
Sébastien Arnold*, James Preiss*, Chen-Yu Wei*, Marius Kloft

Understanding the Variance of Policy Gradient Estimators in Reinforcement Learning (Best Poster Award)
SoCal Machine Learning Symposium (SoCalML), 2019
Sébastien Arnold*, James Preiss*, Chen-Yu Wei*, Marius Kloft

Selected Talks

Some Recent Advances in the Theory of Online Decision Making, Special Topics, National Taiwan University   *Oct. 2022*
Optimal Dynamic Regret for Bandits without Prior Knowledge, BLISS Seminar, UC Berkeley   *Oct. 2022*
Optimal Dynamic Regret for Bandits without Prior Knowledge, D3P program workshop, Simons Institute   *Sep. 2022*
Robust and Adaptive Online Decision Making, UMich ECE Seminar   *Apr. 2022*
Robust and Adaptive Online Decision Making, UVa CS Seminar   *Mar. 2022*
Non-stationary RL without Prior Knowledge: an Optimal Black-box Approach, COLT Best Paper Talk   *Aug. 2021*
Linear Last-iterate Convergence of Constrained Saddle-point Optimization, UW Learning in Games Seminar   *May. 2021*
Learning Infinite-horizon Average-reward MDPs with Linear Function Approximation, RL Theory Virtual Seminars   *Sep. 2020*
Bandit Multiclass Linear Classification: Efficient Algorithms for the Separable Case, Theory Day, UC Riverside   *Jan. 2020*
Bandit Multiclass Linear Classification: Efficient Algorithms for the Separable Case, Theory Lunch, Microsoft Research   *June 2019*
Beating Stochastic and Adversarial Semi-bandits Optimally and Simultaneously, ICML Long Talk   *June 2019*
Efficient Online Portfolio with Logarithmic Regret, NeurIPS Spotlight Talk   *Dec. 2018*

Other Activities

Teaching Assistant
CSCI567: Machine Learning   *Fall 2021*
Instructor: Haipeng Luo

Teaching Assistant
CSCI270: Introduction to Algorithms and Theory of Computing course   *Spring 2021*
Instructor: Shawn Shamsian

Teaching Assistant
CSCI699: Introduction to Online Learning   *Fall 2017*
Instructor: Haipeng Luo

Reviewer
NeurIPS 2016, 2018, 2020-2022 / ALT 2018-2021 / AISTAT 2020, 2021 / ICML 2019-2021 / COLT 2019-2022 / FOCS 2019 / AAAI 2020 / JMLR 2020, 2021 / MOR 2020 / ICLR 2021 / TMLR