

Chen-Yu Wei

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Education

University of Southern California

Ph.D. in Computer Science

Supervisor: Haipeng Luo

Los Angeles, CA

2017 – 2022

National Taiwan University

M.S. in Communication Engineering

Supervisor: Wanjiun Liao

Taipei, Taiwan

2013 – 2015

National Taiwan University

B.S. in Electrical Engineering

Taipei, Taiwan

2008 – 2012

Experiences

University of Virginia

Assistant Professor

Department of Computer Science

Charlottesville, VA

Fall 2023 – Present

MIT Institute for Data, Systems, and Society

Postdoctoral Associate

Supervisor: Alexander Rakhlin

Reinforcement Learning

Boston, MA

Spring and Summer 2023

Simons Institute

Research Fellow

Data-Driven Decision Processes

Berkeley, CA

Fall 2022

Simons Institute

Student Visitor

Learning and Games

Berkeley, CA

Spring 2022

Google Research

Research Intern

Supervisor: Christoph Dann, Julian Zimmert

Robustness against Corruption

Virtual

Summer 2021

Simons Institute

Student Visitor

Theory of Reinforcement Learning

Virtual

Fall 2020

Microsoft Research

Research Intern

Supervisor: Alekh Agarwal, John Langford

Personalized Federated Learning

Redmond, WA

Summer 2019

Yahoo Research

Research Intern

Supervisor: Alina Beygelzimer, Dávid Pál, Balázs Szörényi

Bandit Classification

New York City, NY

Summer 2018

Academia Sinica

Research Assistant

Supervisor: Chi-Jen Lu

Online Learning

Taipei, Taiwan

2015 – 2017

Academia Sinica

Research Intern

Supervisor: Yi-Hsuan Yang

Music Information Retrieval

Taipei, Taiwan

Spring 2012

Stanford University

Research Intern (Undergraduate Visiting Research (UGVR) Program)

Supervisor: Boris Murmann

Circuit Design for Medical Ultrasound

Palo Alto, CA

Summer 2011

Honors & Awards

- 2023 **Finalist (Top 4 in the Engineering School and Top 2 in CS), Best Dissertation Award**, USC Viterbi Engineering School
- 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)

Bypassing the Simulator: Near-Optimal Adversarial Linear Contextual Bandits

Haolin Liu*, Chen-Yu Wei*, Julian Zimmert*

NeurIPS 2023

Last-Iterate Convergent Policy Gradient Primal-Dual Methods for Constrained MDPs

Dongsheng Ding*, Chen-Yu Wei*, Kaiqing Zhang*, Alejandro Ribeiro

NeurIPS 2023

No-Regret Online Reinforcement Learning with Adversarial Losses and Transitions

Tiancheng Jin, Junyan Liu, Chloe Rouyer, William Chang, Chen-Yu Wei, Haipeng Luo

NeurIPS 2023

First- and Second-Order Bounds for Adversarial Linear Contextual Bandits

Julia Olkhovskaya, Jack Mayo, Tim van Erven, Gergely Neu, Chen-Yu Wei

NeurIPS 2023

Uncoupled and Convergent Learning in Two-Player Zero-Sum Markov Games

Yang Cai*, Haipeng Luo*, Chen-Yu Wei*, Weiqiang Zheng*

NeurIPS 2023

A Blackbox Approach to Best of Both Worlds in Bandits and Beyond

Christoph Dann*, Chen-Yu Wei*, Julian Zimmert*

COLT 2023

Best of Both Worlds Policy Optimization (Long talk)

Christoph Dann*, Chen-Yu Wei*, Julian Zimmert*

ICML 2023

Refined Regret for Adversarial MDPs with Linear Function Approximation

Yan Dai, Haipeng Luo, Chen-Yu Wei, Julian Zimmert

ICML 2023

A Unified Algorithm for Stochastic Path Problems

Christoph Dann*, Chen-Yu Wei*, Julian Zimmert*

ALT 2023

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 Sébastien Bubeck*, Yuanzhi Li*, Haipeng Luo*, Chen-Yu Wei*	COLT 2019
Bandit Multiclass Linear Classification: Efficient Algorithms for the Separable Case Alina Beygelzimer*, Dávid Pál*, Balázs Szörényi*, Devanathan Thiruvengatathari*, Chen-Yu Wei*, Chicheng Zhang*	ICML 2019
Beating Stochastic and Adversarial Semi-bandits Optimally and Simultaneously (Long talk) Julian Zimmert, Haipeng Luo, Chen-Yu Wei	ICML 2019
Efficient Online Portfolio with Logarithmic Regret (Spotlight) Haipeng Luo*, Chen-Yu Wei*, Kai Zheng*	NeurIPS 2018
More Adaptive Algorithms for Adversarial Bandits Chen-Yu Wei, Haipeng Luo	COLT 2018
Efficient Contextual Bandits in Non-stationary Worlds Haipeng Luo*, Chen-Yu Wei*, Alekh Agarwal, John Langford	COLT 2018
Online Reinforcement Learning in Stochastic Games Chen-Yu Wei, Yi-Te Hong, Chi-Jen Lu	NeurIPS 2017
Tracking the Best Expert in Non-stationary Stochastic Environments Chen-Yu Wei, Yi-Te Hong, Chi-Jen Lu	NeurIPS 2016

Workshop Papers

Federated Residual Learning <i>NeurIPS Workshop on Scalability, Privacy, and Security in Federated Learning (Spicy-FL), 2020</i> Chen-Yu Wei, Alekh Agarwal, John Langford
Analyzing the Variance of Policy Gradient Estimators for the Linear-Quadratic Regulator <i>NeurIPS Workshop on Optimization Foundations for Reinforcement Learning (OPTRL), 2019</i> 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

Invited Talks

Exploration Bonus for Policy Optimization , AI/ML Seminar, UVa CS	Sep. 2023
Exploration Bonus for Policy Optimization , Distinguished Talk Series, Microsoft Research	Jan. 2023
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

Instructor: Haipeng Luo

Fall 2021

Teaching Assistant

CSCI270: Introduction to Algorithms and Theory of Computing course

Instructor: Shawn Shamsian

Spring 2021

Teaching Assistant

CSCI699: Introduction to Online Learning

Instructor: Haipeng Luo

Fall 2017

Reviewer

COLT 2019–2024 / ALT 2018–2024 / STOC 2023 / FOCS 2019 / NeurIPS 2016–2023 / ICML 2019–2023 / ICLR 2021–2024

AISTAT 2020, 2021 / AAAI 2020 / JMLR / MOR / TMLR