

CHEN-YU WEI

Homepage | Google Scholar | E-mail: chenyu.wei@virginia.edu | Last update: July 2025

EDUCATION

University of Southern California Los Angeles, CA
Ph.D. in Computer Science 2017–2022
Supervisor: Haipeng Luo
Thesis: Robust and Adaptive Online Decision Making

National Taiwan University Taipei, Taiwan
M.S. in Communication Engineering 2013–2015
Supervisor: Wanjiun Liao
Thesis: Downlink Scheduling Policies in Heterogeneous Networks with User Equipment Side Interference Cancellation

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

EXPERIENCES

University of Virginia Charlottesville, VA
Assistant Professor 2023–Present
Computer Science Department

MIT Institute for Data, Systems, and Society (IDSS) Cambridge, MA
Postdoctoral Associate Spring and Summer 2023
Supervisor: Alexander Rakhlin

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

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

Google Research Remote
Research Intern Summer 2021
Supervisor: Christoph Dann, Julian Zimmert
Topic: Corruption Robust Reinforcement Learning

Simons Institute Remote
Student Visitor Fall 2020
Program: Theory of Reinforcement Learning

Microsoft Research Redmond, WA
Research Intern Summer 2020
Supervisor: Alekh Agarwal
Topic: Personalized Federated Learning

Yahoo Research New York City
Research Intern Summer 2019
Supervisor: Alina Beygelzimer
Topic: Bandit Classification

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

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

HONORS AND AWARDS

Finalist (Top 2 in CS), Best Dissertation Award , USC Viterbi Engineering School	2023
Top Reviewers , NeurIPS	2022
Prize for Excellence in Research with a Substantial Mathematical Component , Center for Applied Math Science, USC	2022
Simons-Berkeley Research Fellowship , Simons Institute for the Theory of Computing	2022
Best Paper Award , International Conference on Algorithmic Learning Theory	2022
Best Paper Award , Conference on Learning Theory	2021
Best Research Assistant Award , Computer Science Department, USC	2020
Best Poster Award , SoCal Machine Learning Symposium	2019
Taiwan-USC Scholarship , Ministry of Education, Taiwan	2017
Tenth Place , ACM International Collegiate Programming Contest – Asia Regional in Kaohsiung	2010

PUBLICATIONS (CONFERENCE PAPERS)

HANQ: Hypergradients, Asymmetry, and Normalization for Fast and Stable Deep Q-Learning Braham Snyder, Chen-Yu Wei	<i>RLC</i> 2025
Decision Making in Hybrid Environments: A Model Aggregation Approach (α - β) Haolin Liu, Chen-Yu Wei, Julian Zimmert	<i>COLT</i> 2025
Corruption-Robust Linear Bandits: Minimax Optimality and Gap-Dependent Misspecification (α - β) Haolin Liu, Artin Tajdini, Andrew Wagenmaker, Chen-Yu Wei	<i>NeurIPS</i> 2024
Beating Adversarial Low-Rank MDPs with Unknown Transition and Bandit Feedback (α - β) Haolin Liu, Zakaria Mhammedi, Chen-Yu Wei, Julian Zimmert	<i>NeurIPS</i> 2024
How Does Variance Shape the Regret in Contextual Bandits? (α - β) Zeyu Jia, Jian Qian, Alexander Rakhlin, Chen-Yu Wei	<i>NeurIPS</i> 2024
On Tractable Φ-Equilibria in Non-Concave Games (α - β) Yang Cai, Constantinos Daskalakis, Haipeng Luo, Chen-Yu Wei, Weiqiang Zheng	<i>NeurIPS</i> 2024
Offline Reinforcement Learning: Role of State Aggregation and Trajectory Data (α - β) Zeyu Jia, Alexander Rakhlin, Ayush Sekhari, Chen-Yu Wei	<i>COLT</i> 2024
Near-Optimal Policy Optimization for Correlated Equilibrium in General-Sum Markov Games (α - β) Yang Cai, Haipeng Luo, Chen-Yu Wei, Weiqiang Zheng (<i>Oral</i>)	<i>AISTAT</i> 2024
Towards Optimal Regret in Linear MDPs with Bandit Feedback (α - β) Haolin Liu, Chen-Yu Wei, Julian Zimmert (<i>Spotlight</i>)	<i>ICLR</i> 2024
Bypassing the Simulator: Near-Optimal Adversarial Linear Contextual Bandits (α - β) Haolin Liu, Chen-Yu Wei, Julian Zimmert	<i>NeurIPS</i> 2023
Last-Iterate Convergent Policy Gradient Primal-Dual Methods for Constrained MDPs Dongsheng Ding*, Chen-Yu Wei*, Kaiqing Zhang*, Alejandro Ribeiro	<i>NeurIPS</i> 2023
No-Regret Online Reinforcement Learning with Adversarial Losses and Transitions Tiancheng Jin*, Junyan Liu*, Chloe Rouyer, William Chang, Chen-Yu Wei, Haipeng Luo	<i>NeurIPS</i> 2023
First- and Second-Order Bounds for Adversarial Linear Contextual Bandits Julia Olkhovskaya, Jack Mayo, Tim van Erven, Gergely Neu, Chen-Yu Wei	<i>NeurIPS</i> 2023
Uncoupled and Convergent Learning in Two-Player Zero-Sum Markov Games (α - β) Yang Cai, Haipeng Luo, Chen-Yu Wei*, Weiqiang Zheng	<i>NeurIPS</i> 2023
A Blackbox Approach to Best of Both Worlds in Bandits and Beyond (α - β) Christoph Dann, Chen-Yu Wei, Julian Zimmert	<i>COLT</i> 2023
Best of Both Worlds Policy Optimization (α - β) Christoph Dann, Chen-Yu Wei, Julian Zimmert (<i>Long talk</i>)	<i>ICML</i> 2023
Refined Regret for Adversarial MDPs with Linear Function Approximation (α - β) Yan Dai, Haipeng Luo, Chen-Yu Wei, Julian Zimmert	<i>ICML</i> 2023

A Unified Algorithm for Stochastic Path Problems (α - β) 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 Dongsheng Ding*, Chen-Yu Wei*, Kaiqing Zhang*, Mihailo Jovanovic (Long talk)	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 Chen-Yu Wei, Christoph Dann, Julian Zimmert (Best Paper Award)	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 (α - β) 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 Chen-Yu Wei, Haipeng Luo (Best Paper Award)	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 (α - β) 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 (α - β) Chung-Wei Lee, Haipeng Luo, Chen-Yu Wei, Mengxiao Zhang (Oral)	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 (α - β) Yifang Chen, Chung-Wei Lee, Haipeng Luo, Chen-Yu Wei	COLT 2019
Improved Path-length Regret Bounds for Bandits (α - β) Sébastien Bubeck, Yuanzhi Li, Haipeng Luo, Chen-Yu Wei	COLT 2019
Bandit Multiclass Linear Classification: Efficient Algorithms for the Separable Case (α - β) Alina Beygelzimer, Dávid Pál, Balázs Szörényi, Devanathan Thiruvengatathari, Chen-Yu Wei, Chicheng Zhang	ICML 2019
Beating Stochastic and Adversarial Semi-bandits Optimally and Simultaneously Julian Zimmert, Haipeng Luo, Chen-Yu Wei (Long talk)	ICML 2019
Efficient Online Portfolio with Logarithmic Regret (α - β) Haipeng Luo, Chen-Yu Wei, Kai Zheng (Spotlight)	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	<i>COLT 2018</i>
Online Reinforcement Learning in Stochastic Games Chen-Yu Wei, Yi-Te Hong, Chi-Jen Lu	<i>NeurIPS 2017</i>
Tracking the Best Expert in Non-stationary Stochastic Environments Chen-Yu Wei, Yi-Te Hong, Chi-Jen Lu	<i>NeurIPS 2016</i>

PUBLICATIONS (WORKSHOP PAPERS)

Federated Residual Learning <i>NeurIPS Workshop on Scalability, Privacy, and Security in Federated Learning (Spicy-FL)</i> Chen-Yu Wei, Alekh Agarwal, John Langford	2020
Analyzing the Variance of Policy Gradient Estimators for the Linear-Quadratic Regulator <i>NeurIPS Workshop on Optimization Foundations for Reinforcement Learning (OPTRL)</i> Sébastien Arnold*, James Preiss*, Chen-Yu Wei*, Marius Kloft	2019
Understanding the Variance of Policy Gradient Estimators in Reinforcement Learning <i>SoCal Machine Learning Symposium (SoCalML)</i> Sébastien Arnold*, James Preiss*, Chen-Yu Wei*, Marius Kloft (Best Poster Award)	2019

INVITED TALKS

Collusion in Algorithmic Pricing , Guest Lecture in Economics of Distributed Systems, UVa CS	<i>Oct. 2024</i>
Collusion in Algorithmic Pricing , RL Seminar, Maryland ECE	<i>Oct. 2024</i>
No-Regret Learning and Its Applications in Games, ML, and Optimization , Theory Seminar, UVa CS	<i>June 2024</i>
Exploration Bonus for Policy Optimization , AI/ML Seminar, UVa CS	<i>Sep. 2023</i>
Exploration Bonus for Policy Optimization , Distinguished Talk Series, Microsoft Research	<i>Jan. 2023</i>
Some Recent Advances in the Theory of Online Decision Making , Special Topics, National Taiwan University	<i>Oct. 2022</i>
Optimal Dynamic Regret for Bandits without Prior Knowledge , BLISS Seminar, UC Berkeley	<i>Oct. 2022</i>
Optimal Dynamic Regret for Bandits without Prior Knowledge , D3P program workshop, Simons Institute	<i>Sep. 2022</i>
Robust and Adaptive Online Decision Making , UMich ECE Seminar	<i>Apr. 2022</i>
Robust and Adaptive Online Decision Making , UVa CS Seminar	<i>Mar. 2022</i>
Non-stationary RL without Prior Knowledge: an Optimal Black-box Approach , COLT Best Paper Talk	<i>Aug. 2021</i>
Linear Last-iterate Convergence of Constrained Saddle-point Optimization , UW Learning in Games Seminar	<i>May. 2021</i>
Learning Infinite-horizon Average-reward MDPs with Linear Function Approximation , RL Virtual Seminars	<i>Sep. 2020</i>
Bandit Multiclass Linear Classification: Efficient Algorithms for the Separable Case , Theory Day, UC Riverside	<i>Jan. 2020</i>
Bandit Multiclass Linear Classification: Efficient Algorithms for the Separable Case , Theory Lunch, MSR	<i>June 2019</i>
Beating Stochastic and Adversarial Semi-bandits Optimally and Simultaneously , ICML Long Talk	<i>June 2019</i>
Efficient Online Portfolio with Logarithmic Regret , NeurIPS Spotlight Talk	<i>Dec. 2018</i>

ACADEMIC ACTIVITIES

UVA CS 6501: Reinforcement Learning <i>Instructor</i>	<i>Spring 2025</i>
UVA CS 4710: Artificial Intelligence <i>Instructor</i>	<i>Fall 2024</i>
UVA CS 4501: Introduction to Algorithmic Economics <i>Instructor</i> Co-teaching with Denis Nekipelov	<i>Spring 2024</i>
UVA CS 6501: Reinforcement Learning <i>Instructor</i>	<i>Spring 2024</i>
USC CSCI 567: Machine Learning <i>Teaching Assistant</i> Instructor: Haipeng Luo	<i>Fall 2021</i>
USC CSCI 270: Introduction to Algorithms and Theory of Computing course <i>Teaching Assistant</i> Instructor: Shawn Shamsian	<i>Spring 2021</i>

USC CSCI 699: Introduction to Online Learning

Fall 2017

Teaching Assistant

Instructor: Haipeng Luo

Reviewer for COLT, ALT, STOC, FOCS, NeurIPS, ICML, ICLR, AISTAT, AAAI, JMLR, MOR, TMLR