

# Chen-Yu Wei

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## Education

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### University of Southern California

Ph.D. in Computer Science

Supervisor: Haipeng Luo

Los Angeles, CA

2017 – Present

### 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

## Research Experience

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### Simons Institute

Student Visitor

Learning and Games

Berkeley, CA

Spring 2022

### Google Research

Research Intern

Supervisor: Christoph Dann, Julian Zimmert

Reinforcement Learning

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

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- 2022 **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

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### Conference Papers (\* indicates equal contribution or alphabetical ordering)

- A Model Selection Approach for Corruption Robust Reinforcement Learning** (Best Paper Award) ALT 2022  
Chen-Yu Wei, Christoph Dann, Julian Zimmert
- Decentralized Cooperative Reinforcement Learning with Hierarchical Information Structure** ALT 2022  
Hsu Kao, Chen-Yu Wei, Vijay Subramanian
- Policy Optimization in Adversarial MDPs: Improved Exploration via Dilated Bonuses** NeurIPS 2021  
Haipeng Luo\*, Chen-Yu Wei\*, Chung-Wei Lee
- Achieving Near Instance-Optimality and Minimax-Optimality in Stochastic and Adversarial Linear Bandits Simultaneously** ICML 2021  
Chung-Wei Lee\*, Haipeng Luo\*, Chen-Yu Wei\*, Mengxiao Zhang\*, Xiaojin Zhang\*
- Non-stationary RL without Prior Knowledge: An Optimal Black-box Approach** (Best Paper Award) COLT 2021  
Chen-Yu Wei, Haipeng Luo
- Last-iterate Convergence of Decentralized Optimistic Gradient Descent/Ascent in Infinite-horizon Competitive Markov Games** COLT 2021  
Chen-Yu Wei, Chung-Wei Lee, Mengxiao Zhang, Haipeng Luo
- Impossible Tuning Made Possible: A New Expert Algorithm and Its Applications** COLT 2021  
Liyu Chen\*, Haipeng Luo\*, Chen-Yu Wei\*
- Minimax Regret for Stochastic Shortest Path with Adversarial Costs and Known Transition** COLT 2021  
Liyu Chen, Haipeng Luo, Chen-Yu Wei
- Learning Infinite-horizon Average-reward MDPs with Linear Function Approximation** AISTAT 2021  
Chen-Yu Wei, Mehdi Jafarnia-Jahromi, Haipeng Luo, Rahul Jain
- Linear Last-iterate Convergence for Constrained Saddle-point Optimization** ICLR 2021  
Chen-Yu Wei, Chung-Wei Lee, Mengxiao Zhang, Haipeng Luo
- Adversarial Online Learning with Changing Action Sets: Efficient Algorithms with Approximate Regret Bounds** ALT 2021  
Ehsan Emamjomeh-Zadeh\*, Chen-Yu Wei\*, Haipeng Luo, David Kempe
- Bias No More: High-probability Data-dependent Regret Bounds for Adversarial Bandits and MDPs** (Oral) NeurIPS 2020  
Chung-Wei Lee\*, Haipeng Luo\*, Chen-Yu Wei\*, Mengxiao Zhang\*
- Taking a Hint: How to Leverage Loss Predictors in Contextual Bandits?** COLT 2020  
Chen-Yu Wei, Haipeng Luo, Alekh Agarwal
- Model-free Reinforcement Learning in Infinite-horizon Average-reward Markov Decision Processes** ICML 2020  
Chen-Yu Wei, Mehdi Jafarnia-Jahromi, Haipeng Luo, Hiteshi Sharma, Rahul Jain
- A New Algorithm for Non-stationary Contextual Bandits: Efficient, Optimal, and Parameter-free** COLT 2019  
Yifang Chen\*, Chung-Wei Lee\*, Haipeng Luo\*, Chen-Yu Wei\*
- 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 Thiruvengatarchari\*, 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)**

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**

*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**

**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**

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