

# Kai Wang

☎ 626-588-8197 | ✉ kaiwang@g.harvard.edu | 📷 guaguakai | 📺 guaguakai

## Education

### Harvard University

Ph.D. in Computer Science

Advised by Professor Milind Tambe

Overall GPA: 4.0/4.0 (Harvard 2019 - Present), 3.93/4.0 (USC 2017 - 2019)

2017 - Present

Massachusetts, United States

### National Taiwan University

B.S. in Electrical Engineering and Mathematics

Overall GPA: 4.07/4.3 Major GPA: 4.13/4.3(EE) 4.03/4.3(Mathematics)

2012 - 2017

Taipei, Taiwan

## Honors

### Taiwan Government Scholarship to Study Abroad

Scholarship

2021

### Association for the Advancement of Artificial Intelligence

Best Paper Runner Up

2021

### USC Asian Pacific Alumni Association

Scholarship

2018

### International Mathematical Olympiad

Silver Medals

2010, 2011

## Conference Publications: Planning-aware Learning

- **Kai Wang**, Sanket Shah, Haipeng Chen, Andrew Perrault, Finale Doshi-Velez, and Milind Tambe  
“Learning MDPs from Features: Predict-Then-Optimize for Sequential Decision Problems by Reinforcement Learning”, under review.
- **Kai Wang**, Bryan Wilder, Andrew Perrault, and Milind Tambe  
“Automatically Learning Compact Quality-aware Surrogates for Optimization Problems”, in *NeurIPS 2020 (spotlight)*.
- Ayan Mukhopadhyay, **Kai Wang**, Andrew Perrault, Mykel Kochenderfer, Milind Tambe, and Yevgeniy Vorobeychik  
“Robust Spatial-Temporal Incident Prediction”, in *Conference on Uncertainty in Artificial Intelligence 2020*.
- **Kai Wang**, Andrew Perrault, Aditya Mate, and Milind Tambe.  
“Scalable Game-Focused Learning of Adversary Models: Data-to-Decisions in Network Security Games”, in *International Conference On Autonomous Agents and Multi-Agent Systems 2020*.

## Conference Publications: Multi-agent Planning in Wildlife Conservation and Security

- **Kai Wang**, Lily Xu, Andrew Perrault, Michael K. Reiter, and Milind Tambe  
“Coordinating Followers to Reach Better Equilibria: End-to-End Gradient Descent for Stackelberg Games”, under review.
- Lily Xu, Elizabeth Bondi, Fei Fang, Andrew Perrault, **Kai Wang**, and Milind Tambe  
“Dual-Mandate Patrols: Multi-Armed Bandits for Green Security”, *AAAI 2021 (best paper runner up)*
- Nitin Kamra, Umang Gupta, **Kai Wang**, Fei Fang, Yan Liu, Milind Tambe.  
“DeepFP for Finding Approximate Nash Equilibrium in Continuous Action Spaces”, *Conference on Decision and Game Theory for Security 2019*

- Sarah Cooney, **Kai Wang**, Elizabeth Bondi, Thanh Nguyen, Phebe Vayanos, Hailey Winetrobe, Edward Cranford, Cleotilde Gonzalez, Christian Lebiere, and Milind Tambe.  
“Learning to Signal in the Goldilocks Zone: Improving Adversary Compliance in Security Games”, *European Conference on Machine Learning 2019*.
- Nitin Kamra, Umang Gupta, **Kai Wang**, Fei Fang, Yan Liu, Milind Tambe.  
“Deep Fictitious Play for Games with Continuous Action Spaces”, extended abstract in *International Conference On Autonomous Agents and Multi-Agent Systems 2019*.
- Sara Marie Mc Carthy, Corine Laan, **Kai Wang**, Phebe Vayanos, Milind Tambe, and Arunesh Sinha.  
“The Price of Usability: Designing Operationalizable Strategies for Security Games”, in *International Joint Conference on Artificial Intelligence 2018*.
- **Kai Wang**, Qingyu Guo, Phebe Vayanos, Milind Tambe, and Bo An.  
“Equilibrium Refinement in Security Games with Arbitrary Scheduling Constraints”, in *International Conference On Autonomous Agents and Multi-Agent Systems 2018*.
- Haifeng Xu, **Kai Wang**, Phebe Vayanos, and Milind Tambe.  
“Strategic Coordination of Human Patrollers and Mobile Sensors with Signaling for Security Games”, in *Association for the Advancement of Artificial Intelligence 2018*.

## Workshop Publications

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- **Kai Wang**, Jeffrey Brantingham, and Milind Tambe.  
“Learning Opportunistic Adversarial Model on Global Wildlife Trade”, *International Conference On Autonomous Agents and Multi-Agent Systems 2021 Autonomous Agents for Social Good Workshop (AASG)*
- **Kai Wang**.  
“Balance Between Scalability and Optimality in Network Security Games”, *International Conference On Autonomous Agents and Multi-Agent Systems 2020 Doctoral Consortium*
- **Kai Wang**, Bryan Wilder, and Milind Tambe.  
“Adversarial Machine Learning with Double Oracle”, *International Joint Conference on Artificial Intelligence 2019 Doctoral Consortium*
- **Kai Wang**, Bryan Wilder, Sze-chuan Suen, Milind Tambe, and Bistra Dilkina.  
“Improving GP-UCB Algorithm by Harnessing Decomposed Feedback”, *European Conference on Machine Learning 2019 SoGood Workshop*
- Sarah Cooney, Wendy Gomez, **Kai Wang**, Jorja Leap, P. Jeffery Brantingham, and Milind Tambe.  
“Mobile Game Theory with Street Gangs”, *European Conference on Machine Learning 2019 SoGood Workshop*
- **Kai Wang**, Hong-Jyun Wang, and Ho-Lin Chen.  
“Routing Games with Priorities”, in *Asian Association for Algorithms and Computation 2016* (Oral Presentation)

## Teaching and Leadership Experience

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<b>Research Mentor</b> Independent Research	2020-Present
• I am fortunate to work with the following students: London Lowmanstone, Preston Yi Jie Ching, Caroline Abel	
<b>Teaching Fellow</b> Harvard CS 127/227 Cryptography	Spring 2020
<b>President</b> IMO Summer Camp	August 2013, August 2015
<b>Captain</b> National Taiwan University Varsity Volleyball Team	June 2014 - June 2015

## Work Experience

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### Adobe Research

Research Intern

• Mentors: Georgios Theodorou, Sridhar Mahadevan

May 2021 - Dec 2021

*Remote*

### BravoAI

Software Engineer & Cofounder

March 2017 - July 2017

*Taipei, Taiwan*

### Mixerbox Incorporation

Software Engineer Intern

April 2016 - March 2017

*Taipei, Taiwan*

## Professional Service

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**Program Committee** AAAI 2022, AAAI 2021, IJCAI AI4SG workshop 2021, 2020, 2019, IJCAI AIWC workshop 2018

**Subreviewer** NeurIPS 2021, EC 2021, ICML 2021, NeurIPS 2020, AAMAS 2020, AAAI 2020