Bo An

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Research Interest

Artificial intelligence, multi-agent systems, computational game theory, electronic commerce, reinforcement learning, machine learning, optimization.

Education

University of Massachusetts Amherst, Amherst, MA, USA. (2006 – 2010)
⋆ Ph.D in Computer Science, defended in September 2010, conferred in February 2011
⋆ Advisor: Victor Lesser
⋆ Thesis: Automated Negotiation for Complex Multi-Agent Resource Allocation
⋆ Committee: Victor Lesser (chair), Jim Kurose, Shlomo Zilberstein, Michael Zink
Chongqing University, Chongqing, China. (2003 – 2006)
⋆ M.Sc in Computer Science, June 2006
⋆ Advisor: Daijie Cheng
Chongqing University, Chongqing, China. (1999 – 2003)
⋆ B.Sc in Computer Science, June 2003

Research Appointments

President's Chair Professor — September 2022 –
College of Computing and Data Science — **Nanyang Technological University**

Head of Division of Artificial Intelligence, College of Computing and Data Science — May 2024 –
Nanyang Technological University

Director for Centre of AI-for-X — December 2024 –
Nanyang Technological University

Director for Turing AI Scholarship Program (TAISP) — September 2024 –
Nanyang Technological University

Co-Director for Artificial Intelligence Research Institute (AI.R) — August 2020 – November 2024
Nanyang Technological University

Deputy Director of the Renaissance Engineering Programme (REP) — April 2022 – December 2023
Nanyang Technological University

Assistant Chair (Innovation) — March 2018 – April 2024
School of Computer Science and Engineering — **Nanyang Technological University**

President's Council Chair Associate Professor in Computer Science and Engineering — April 2019 – August 2022
Nanyang Technological University

Associate Professor (tenured) — March 2018 – August 2022

School of Computer Science and Engineering **Nanyang Technological University**

Nanyang Assistant Professor September 2014 – February 2018
School of Computer Science and Engineering **Nanyang Technological University**

Assistant Professor July 2013 – August 2014
School of Computer Science and Engineering **Nanyang Technological University**

Associate Professor June 2012 – June 2013
Institute of Computing Technology **Chinese Academy of Sciences**

Postdoctoral Research Associate October 2010 – June 2012
Teamcore Research Group (Milind Tambe) **University of Southern California**

I have been part of the research effort that pioneered the first generation of operational game-theoretic systems for counter-terrorism in many security settings, including for LAX (Los Angeles International Airport), FAMS (US Federal Air Marshals Service), TSA (US Transportation Security Agency), and the US Coast Guard. This research represents the first and only deployed game theoretic systems that provide unpredictability to improve security for key organizations.

Research Assistant September 2006 – September 2010
Multi-agent Systems Lab (Victor Lesser) **University of Massachusetts, Amherst**

I focused on agent-mediated negotiation by extending both theoretical and heuristic bargaining approaches to more realistic settings involving uncertainty, market competition, decommitment, and acquirement of multiple resources. Research results have been applied to sensor networks, distributed streaming processing systems, and cloud computing.

Research Intern Summer 2007
Next Generation Distributed Systems Dept **IBM T.J.Watson Research Center**

I built a negotiation management system for a collaborative stream processing environment (IBM System S).

Awards

Significant Awards:

- ⋆ **Nanyang Research Award, 2022**. NTU sets the award to give the highest recognition to individuals or teams who have made outstanding contributions in scientific knowledge on a global scale through novel research breakthroughs. The evaluation is based on the quality and impact of research, taking into consideration the significance and impact of the research work and recognition by the community. The maximum number of awards per year is 3.
- ⋆ **ACM Distinguished Member, 2021**. The Distinguished Members Grade recognizes those ACM members with at least 15 years of professional experience and 5 years of Professional Membership in the last 10 years who have achieved significant accomplishments or have made a significant impact on the computing field.
- ⋆ **President's Council Chair in Computer Science and Engineering, 2019**. NTU Singapore recognises faculty's achievements through named chair professorships to attract, nurture, recognise and retain outstanding faculty at all levels of career progression. I was appointed President's Council Chair in Computer Science and Engineering.
- ⋆ **AAAI Senior Member, 2019**. The Association for the Advancement of Artificial Intelligence (AAAI) Senior Member status is designed to recognize AAAI members who have achieved significant accomplishments within the field of artificial intelligence. I am the first AAAI senior member in Singapore.
- ⋆ **Nanyang Research Award (Young Investigator), 2018**. NTU sets the award to give the highest recognition to individuals or teams, who are 39 years of age and below, and have made outstanding contributions in extending the frontiers of knowledge. The evaluation is based on the quality and impact of research, taking into consideration the significance and impact of the research work. The maximum number of awards per year is 3.
- ⋆ **AI's 10 to Watch, 2018**, I was named to IEEE Intelligent Systems' list of "AI's 10 to Watch". Every two years, IEEE Intelligent Systems acknowledges and celebrates 10 young stars in the field of AI as "AI's 10 to

watch." The honor acknowledges "10 accomplished AI researchers in their early careers . . . who promise to be the leaders of the field."

- ⋆ **Winner of the Microsoft Collaborative AI Challenge, 2017**, I led the team HogRider (Team members: PhD students Yanhai Xiong, Mengchen Zhao, Haipeng Chen) which won the 2017 Microsoft Collaborative AI Challenge. Microsoft Collaborative AI Challenge asked teams to solve a game using collaborative agents to push the state of the art of collaborative AI. More than 80 teams from 26 countries entered the challenge and HogRider won the first place.
- ⋆ **Early Career Spotlight Talk, IJCAI'2017**, I was invited by the executive and advisory boards of IJCAI'2017 to give a talk at IJCAI'2017 within the Early Career Spotlight track. The Early Career Spotlight talks are aimed at providing an accessible introduction to the research directions of some of the most active early career researchers in all representative areas of AI.
- ⋆ **Innovative Application Award, Innovative Applications of Artificial Intelligence (IAAI) 2016**, Our paper "Deploying PAWS: Field Optimization of the Protection Assistant for Wildlife Security" won the Innovative application award at The Twenty-Eighth Annual Conference on Innovative Applications of Artificial Intelligence (IAAI-16).
- ⋆ **Nanyang Assistant Professorship (NAP)**, Awarded in 2014. The NAP scheme was launched in 2007 as an elite early career award for outstanding young researchers and exceptional scholars worldwide who aspire to research leadership role at NTU. The scheme is targeted at those who are within 10 years of their PhD or equivalent degree in respective field but with established research track records in disciplines strategic to NTU's interest. NAP's awardees receive up to S$1 million of research start-up grants to establish their research in NTU. NTU received over 2,500 applicants (2007-2012) from over 40 countries worldwide and awarded 37 professorships to date.
- ⋆ **Daniel H. Wagner Prize for Excellence in Operations Research Practice, INFORMS**, Awarded at the annual meeting of the INFORMS Operations Research society, the Wagner Prize recognizes excellence in Operations Research practice. Our paper entitled "A Deployed Quantal Response Based Patrol Planning System for the US Coast Guard" won this competition for 2012.
- ⋆ **National 1000 Young Talents Program**, I was selected in the third batch of the "National 1000 Young Talents Program". The program was started by the Organization Department of the CPC Central Committee and is the national supreme talents recruitment plan. The applicants should be the top-notch talents in their research fields, and have the potential to become future leaders in relevant areas.
- ⋆ **Best Innovative Application Paper at AAMAS'2012**, Our paper "PROTECT: A deployed game theoretic system to protect the ports of the United States" won the Best Innovative Application Paper award at the 11th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'2012).
- ⋆ **Operational Excellence Award Commander**, First United States Coast Guard District's Operational Excellence Award for my research on the PROTECT scheduling software used to intelligently randomize boat patrols of critical infrastructure around Boston Harbor, 2011.
- ⋆ **The 2010 IFAAMAS (International Foundation for Autonomous Agents and Multi-Agent Systems) Victor Lesser Distinguished Dissertation Award**. An annual award for the best PhD thesis in the area of autonomous agents and multi-agent systems. Award citation: "for ground-breaking work on negotiation in realistic, dynamic settings including concurrent one-to-many and many-to-many negotiations under market uncertainty". Award winners receive a certificate signed by the IFAAMAS Chair and a 1500EUR payment. Award winners are also invited to give a talk at the premier International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS).

Other Awards:

- ⋆ **Best Paper at DAI'2024**, Our paper "Multi-agent multi-game entity transformer: Towards generalist models in MARL" won the Best Paper award at the 6th International Conference on Distributed Artificial Intelligence (DAI'24).
- ⋆ Nominated CCDS "Outstanding Lecturer", Nanyang Education Award 2024, NTU, Sept. 2024. Only 6 faculty members from the college were nominated.

- ⋆ Nominated SCSE "Outstanding Lecturer", Nanyang Education Award 2023, NTU, Sept. 2023. Only 5 faculty members from the school were nominated.
- ⋆ Nominated SCSE "Outstanding Lecturer", Nanyang Education Award 2022, NTU, Sept. 2022. Only 5 faculty members from the school were nominated.
- ⋆ Nominated SCSE "Outstanding Lecturer", Nanyang Education Award 2021, NTU, Sept. 2021. Only 5 faculty members from the school were nominated.
- ⋆ 2021 **NTU Graduate College Mentoring Award**, presented to supervisors who have shown excellence and innovation in mentoring graduate students. The award recognises supervisors who have demonstrated an unusual commitment to nurture and motivate graduate students, and the ability to foster their intellectual, creative, scholarly and professional growth. Only 1 winner per year.
- ⋆ **Best Paper at DAI'2020**, Our paper "Context-aware multi-agent coordination with loose couplings and repeated interaction" won the Best Paper award at the 2nd International Conference on Distributed Artificial Intelligence (DAI'20).
- ⋆ Nominated SCSE "Outstanding Lecturer", Nanyang Education Award 2019, NTU, Sept. 2019. Only 5 faculty members from the school were nominated.
- ⋆ Nominated SCSE "Outstanding Lecturer", Nanyang Education Award 2018, NTU, Sept. 2018. Only 5 faculty members from the school were nominated.
- ⋆ Nominated SCSE "Outstanding Lecturer", Nanyang Education Award 2017, NTU, Sept. 2017. Only 5 faculty members from the school were nominated.
- ⋆ Best Student Paper at CCFAI'2013, Our paper "Online Counterfactual Regret Minimization in Repeated Imperfect Information Extensive Games" won the Best Student Paper award at the 2013 China Artificial Intelligence Conference. Three papers were awarded out of 307 accepted papers.
- ⋆ Runner-up of the Automated Negotiating Agents Competition (ANAC) 2010 held in conjunction with the 9th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2010), May 2010.
- ⋆ Awarded UMASS Graduate School Fellowship for 2009-2010, one of ten graduate students chosen from all schools of the University of Massachusetts, Amherst.
- ⋆ Passed the Portfolio (PhD candidacy exam) with *distinction*, December 2008, an honor given to 19 computer science students at the University of Massachusetts, Amherst since 1995 (approx one award each year).
- ⋆ Excellent Student Award of Chongqing, 2006.
- ⋆ First prize of the Chinese Undergraduate Mathematical Contest in Modelling (CUMCM'2001).

Awards by students:

- ⋆ My PhD student Yuzhou Chao's Google PhD Fellowship in 2024.
- ⋆ My PhD student Youzhi Zhang's thesis entitled "Computing Team-Maxmin Equilibria in Zero-Sum Multiplayer Games" won the 2021 SCSE Outstanding PhD Thesis Award.
- ⋆ My PhD student Lei Feng's thesis entitled "Advanced Topics in Weakly Supervised Learning" won Runner-up for the 2021 SCSE Outstanding PhD Thesis Award.
- ⋆ My PhD student Mengchen Zhao's thesis entitled "Advanced Attack and Defense Technique in Machine Learning Systems" won the 2019 SCSE Outstanding PhD Thesis Award.
- ⋆ FYP-URECA Project "AI Music Composition using Deep Learning" by TAN Hao Hao won the 2019 NTU DISCOVER URECA Poster Exhibition and Competition.
- ⋆ URECA Project by TAN Hao Hao won the second place in The Eighteenth International Automated Negotiating Agents Competition (Diplomacy Strategy Game League). The competition was held in conjunction with the IJCAI'17 conference in August 2017.
- ⋆ Undergraduate Final Year Project by TAN Yi Xin won the second place in The Seventh International Automated Negotiating Agents Competition held in conjunction with the AAMAS'16 conference in May 2016.

Ph.D Dissertation

[1] **Bo An**. Automated Negotiation for Complex Multi-Agent Resource Allocation. Ph.D. Dissertation. Department of Computer Science, University of Massachusetts Amherst, MA, defended in September 2010. Committee: Victor Lesser (chair), Jim Kurose, Shlomo Zilberstein, Michael Zink. (Winner of the 2010 IFAAMAS Victor Lesser Distinguished Dissertation Award.)

Rigorously Refereed Journal Publications

[2] Renchunzi Xie, Ambroise Odonnat, Vasilii Feofanov, Ievgen Redko, Jianfeng Zhang, **Bo An**. Leveraging gradients for unsupervised accuracy estimation under distribution shift, ***Transactions on Machine Learning Research (TMLR)***, accepted.

[3] Aye Phyu Phyu Aung, Xinrun Wang, Ruiyu Wang, Hau Chan, **Bo An**, Xiaoli Li, J. Senthilnath. Double oracle neural architecture search for game theoretic deep learning models, ***IEEE Transactions on Image Processing***, accepted.

[4] Shifei Ding, Wei Du, Ling Ding, Jian Zhang, Lili Guo, **Bo An**. Multi-agent reinforcement learning with graphical mutual information maximization, ***IEEE Transactions on Neural Networks and Learning Systems***, accepted.

[5] Senlin Shu, Haobo Wang, Zhuowei Wang, Bo Han, Tao Xiang, **Bo An**, Lei Feng. Online binary classifcation from similar and dissimilar data, ***Machine Learning***, Vol.113, No.6, pp.3463-3484, 2024.

[6] Shifei Ding, Wei Du, Ling Ding, Jian Zhang, Lili Guo, **Bo An**. Robust multi-agent communication with graph information bottleneck optimization, ***IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)***, Vol.46, No.5, pp.3096-3107, 2024.

[7] Jiaqi Lv, Biao Liu, Lei Feng, Ning Xu, Miao Xu, **Bo An**, Gang Niu, Xin Geng, Masashi Sugiyama. On the robustness of average losses for partial-label learning, ***IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)***, Vol.46, No.5, pp.2569-2583, 2024.

[8] Wanyuan Wang, Qian Che, Yifeng Zhou, Weiwei Wu, **Bo An**, Yichuan Jiang. Offline policy reuse-guided anytime online collective multiagent planning and its application to mobility-on-demand systems, ***Journal of Autonomous Agents and Multi-Agent Systems***, Vol.38, article 19, 2024.

[9] Shijie Han, Siyuan Li, **Bo An**, Wei Zhao, Peng Liu. Classifying ambiguous identities in hidden-role Stochastic games with multi-agent reinforcement learning, ***Journal of Autonomous Agents and Multi-Agent Systems***, Vol.37, No.2, article 35, 2023.

[10] Lei Feng, Senlin Shu, Yuzhou Cao, Lue Tao, Hongxin Wei, Tao Xiang, **Bo An**, Gang Niu. Multiple-instance learning from unlabeled bags with pairwise similarity, ***IEEE Transactions on on Knowledge and Data Engineering***, Vol.35, No.11, pp.11599-11609, 2023.

[11] Hongxin Wei, Renchunzi Xie, Lei Feng, Bo Han, **Bo An**. Deep learning from multiple noisy annotators as a union, ***IEEE Transactions on Neural Networks and Learning Systems***, Vol.34, No.12, 10552-10562, 2023.

[12] Shuo Sun, Molei Qin, Xinrun Wang, **Bo An**. PRUDEX-Compass: Towards systematic evaluation of reinforcement learning in financial markets, ***Transactions on Machine Learning Research (TMLR)***, March 2023.

[13] Shuo Sun, Rundong Wang, **Bo An**. Reinforcement learning for quantitative trading, ***ACM Transactions on Intelligent Systems and Technology***, Vol.14, No.3, pp.1-29, 2023.

[14] Zhuowei Wang, Jing Jiang, Bo Han, Lei Feng, **Bo An**, Gang Niu, Guodong Long. SemiNLL: A framework of noisy-label learning by semi-supervised learning, ***Transactions on Machine Learning Research (TMLR)***.

[15] Jiuchuan Jiang, Kai Di, **Bo An**, Yichuan Jiang, Zhan Bu, Jie Cao. Batch crowdsourcing for complex tasks based on distributed team formation in e-markets, ***IEEE Transactions on Transactions on Parallel and Distributed Systems***, Vol.33, No.12, pp.3600-3615, 2022.

[16] **Bo An**, Shuo Sun, Rundong Wang. Deep Reinforcement learning for quantitative trading: Challenges and opportunities, ***IEEE Intelligent Systems***, Vol.37, No.2, pp.23-26, 2022.

[17] Lei Feng, Jun Huang, Senlin Shu, **Bo An**. Regularized matrix factorization for multi-label learning with missing labels, ***IEEE Transactions on Cybernetics***, Vol.52, No.5, pp.3710-3722, 2022.

[18] Jiuchuan Jiang, **Bo An**, Yichuan Jiang, Chenyan Zhang, Zhan Bu, Jie Cao. Group-oriented task allocation for crowdsourcing in social networks, ***IEEE Transactions on Systems, Man, and Cybernetics: Systems***, Vol.51, No.7, pp.4417-4432, 2021.

[19] Xiaoxuan Hu, Waiming Zhu, Huawei Ma, **Bo An**, Yanling Zhi, Yi Wu. Orientational variable-length strip covering problem: A branch-and-price-based algorithm. ***European Journal of Operational Research***, Vol.289, No.1, pp.254-269, 2021.

[20] Yanchen Deng, **Bo An**. Utility distribution matters: Enabling fast belief propagation for multi-agent optimization with dense local utility function, ***Journal of Autonomous Agents and Multi-Agent Systems***, Vol.35, No.2, Article 24, 2021.

[21] Yanhai Xiong, **Bo An**, Sarit Kraus. Electric vehicle charging strategy study and the application on charging station placement, ***Journal of Autonomous Agents and Multi-Agent Systems***, Vol.35, No.1, Article 3, 2021.

[22] Lei Feng, Hongxin Wei, Qingyu Guo, Zhuoyi Lin, **Bo An**. Embedding-augmented generalized matrix factorization for recommendation with implicit feedback, ***IEEE Intelligent Systems***, Vol.36, No.6, pp.32-41, 2021.

[23] Wanyuan Wang, Zichen Dong, **Bo An**, Yichuan Jiang. Toward efficient city-scale patrol planning using decomposition and grafting, ***IEEE Transactions on Intelligent Transportation Systems***, Vol.22, No.2, pp.747-757, 2021.

[24] Xiaobo Ma, **Bo An**, Mengchen Zhao, Xiapu Luo, Lei Xue, Zhenhua Li, Tony Miu, Xiaohong Guan. Randomized security patrolling for link flooding attack detection. ***IEEE Transactions on Dependable and Secure Computing***, Vol.17, No.4, pp.795-812, 2020.

[25] Wanyuan Wang, **Bo An**, Yichuan Jiang, Ning Luo. Optimal spot-checking for improving the evaluation quality of crowdsourcing: Application to peer grading systems, ***IEEE Transactions on Computational Social Systems***, Vol.7, No.4, pp.940-955, 2020.

[26] Jiuchuan Jiang, **Bo An**, Yichuan Jiang, Donghui Lin. Context-aware reliable crowdsourcing in social networks, ***IEEE Transactions on Systems, Man, and Cybernetics: Systems***, Vol.50, No.2, pp.617-632, 2020.

[27] Xiaobo Ma, Jianfeng Li, Yajuan Tang, **Bo An**, Xiaohong Guan. Protecting internet infrastructure against link flooding attacks: A techno-economic perspective, ***Information Sciences***, Vol.479, pp.486-502, 2019.

[28] Jiuchuan Jiang, **Bo An**, Yichuan Jiang, Peng Shi, Zhan Bu, Jie Cao. Batch allocation for tasks with overlapping skill requirements in crowdsourcing, ***IEEE Transactions on Transactions on Parallel and Distributed Systems***, Vol.30, No.8, pp.1722-1737, 2019.

[29] Wanyuan Wang, Zhanpeng He, Peng Shi, Weiwei Wu, Yichuan Jiang, **Bo An**. Strategic social team crowdsourcing: Forming a Team of truthful workers for crowdsourcing in social networks, ***IEEE Transactions on Mobile Computing***, Vol.18, No.6, pp.1419-1432, 2019.

[30] Xiaoxuan Hu, Waiming Zhu, Bo An, Peng Jin, Wei Xia. A branch and price algorithm for EOS constellation imaging and downloading integrated scheduling problem, ***Computers & Operations Research***, Vol.104, pp.74-89, 2019.

[31] Jiuchuan Jiang, **Bo An**, Yichuan Jiang, Donghui Lin, Zhan Bu, Jie Cao, Zhifeng Hao. Understanding crowdsourcing systems from a multiagent perspective and approach. ***ACM Transactions on Autonomous and Adaptive Systems***, Vol.13, No.2, pp.1–32, 2018.

[32] Xiaobo Ma, Yihui He, Xiapu Luo, Jianfeng Li, Mengchen Zhao, **Bo An**, Xiaohong Guan. Camera placement based on vehicle traffic for better city security surveillance, ***IEEE Intelligent Systems***, Vol.33, No.4, pp.49–61, 2018.

[33] Yue Yin, Yevgeniy Vorobeychik, **Bo An**, Noam Hazon. Optimal defense against election control by deleting voter groups, ***Artificial Intelligence***, Vol.259, pp.32-51, 2018.

[34] Yanhai Xiong, Jiarui Gan, **Bo An**, Chunyan Miao, Ana Bazzan. Optimal electric vehicle fast charging station placement based on game theoretical framework, ***IEEE Transactions on Intelligent Transportation Systems***, Vol.19, No.8, pp.2493-2504, 2018.

[35] Wanyuan Wang, Jiuchuan Jiang, **Bo An**, Yichuan Jiang, Bing Chen. Toward efficient team formation for crowdsourcing in non-cooperative social networks, ***IEEE Transactions on Cybernetics***, Vol.47, No.12, pp.4208-4222, 2017.

[36] Galit Haim, Kobi Gal, **Bo An**, Sarit Kraus. Human-computer negotiation in a three player market setting. ***Artificial Intelligence***, Vol.246, pp.34-52, 2017.

[37] **Bo An**, Haipeng Chen, Noseong Park, V.S. Subrahmanian. Data-driven frequency-based airline profit maximization, ***ACM Transactions on Intelligent Systems and Technology***, Vol.8, No.4, Article 61, 2017.

[38] Jiarui Gan, **Bo An**. Game-theoretic considerations for optimizing taxi system efficiency, ***IEEE Intelligent Systems***, Vol.32, No.3, pp.46–52, 2017.

[39] Haipeng Chen, **Bo An**, Dusit Niyato, Yengchai Soh, Chunyan Miao. Workload factoring and resource sharing via joint vertical and horizontal cloud federation networks, ***IEEE Journal on Selected Areas in Communications***, Vol.35, No.3, pp.557-570, 2017.

[40] Jiuchuan Jiang, Peng Shi, **Bo An**, Jianyong Yu, Chongjun Wang. Measuring the social influences of scientist groups based on multiple types of collaboration relations, ***Information Processing and Management***, Vol.53, No.1, pp.1-20, 2017.

[41] **Bo An**, Nicola Gatti, Victor Lesser. Alternating-offers bargaining in one-to-many and many-to-many settings, ***Annals of Mathematics and Artificial Intelligence***, Vol.77, No.1, pp.67-103, 2016.

[42] Yuan Liu, Jie Zhang, **Bo An**, Sandip Sen. A simulation framework for measuring robustness of incentive mechanisms and its implementation in reputation systems, ***Journal of Autonomous Agents and Multi-Agent Systems***, Vol.30, No.4, pp.581-600, 2016.

[43] Yujing Hu, Yang Gao, **Bo An**. Accelerating multi-agent reinforcement learning by equilibrium transfer, ***IEEE Transactions on Cybernetics***, Vol.45, No.7, pp.1289-1302, 2015.

[44] Yujing Hu, Yang Gao, **Bo An**. Multi-agent reinforcement learning with unshared value functions, ***IEEE Transactions on Cybernetics***, Vol.45, No.4, pp.647-462, 2015.

[45] Han Yu, Zhiqi Shen, Chunyan Miao, **Bo An**, Cyril Leung. Filtering trust opinions through reinforcement learning, ***Decision Support Systems***, Vol.66, pp.102-113, 2014.

[46] Matthew Brown, **Bo An**, Christopher Kiekintveld, Fernando Ordonez, Milind Tambe. An extended study on multi-objective security games, ***Journal of Autonomous Agents and Multi-Agent Systems***, Vol.28, No.1, pp.31-71, 2014.

[47] **Bo An**, Fernando Ordonez, Milind Tambe, Eric Shieh, Rong Yang, Craig Baldwin, Joseph DiRenzo, Kathryn Moretti, Ben Maule, Garrett Meyer. A deployed quantal response based patrol planning system for the US Coast Guard, ***Interfaces***, Vol.43, No.5, pp.400-420, 2013.

[48] **Bo An**, Nicola Gatti, Victor Lesser. Bilateral bargaining with one–sided uncertain reserve prices. ***Journal of Autonomous Agents and Multi-Agent Systems***, Vol.26, No.3, pp.420-455, 2013.

[49] **Bo An**, Victor Lesser, Kwang Mong Sim. Strategic agents for multi-resource negotiation. ***Journal of Autonomous Agents and Multi-Agent Systems***, Vol.23, No.1, pp.114-153, 2011.

[50] **Bo An**, Victor Lesser. Characterizing contract-based multi-agent resource allocation in networks, ***IEEE Transactions on Systems, Man and Cybernetics, Part B: Cybernetics***, Vol.40, No.3, pp.575-586, June 2010.

[51] Kwang Mong Sim, **Bo An**. Evolving best-response strategies for market-driven agents using aggregative fitness GA, ***IEEE Transactions on Systems, Man and Cybernetics, Part C***, Vol.39, No.3, pp.284-298, May 2009.

[52] **Bo An**, Kwang Mong Sim, Chunyan Miao, Zhiqi Shen. Decision making of negotiation agents using Markov chains, ***Multiagent and Grid Systems Journal***, Vol.4, No.1, pp.5-23, 2008.

[53] **Bo An**, Zhiqi Shen, Chunyan Miao, Daijie Cheng. Algorithms for coalition formation-based on transitive dependence, ***IEEE Transactions on Industrial Informatics***, Vol.3, No.3, pp.234-245, 2007.

[54] **Bo An**, Kwang Mong Sim, Lianggui Tang, Shuangqing Li, Daijie Cheng. Continuous-time negotiation mechanism for software agents, ***IEEE Transactions on Systems, Man and Cybernetics, Part B: Cybernetics***, Vol.36, No.6, pp.1261-1272, Dec. 2006.

[55] Chunyan Miao, Jianshu Weng, Angela Goh, Zhiqi Shen, **Bo An**. Fuzzy cognitive maps for dynamic grid service negotiation, ***Multiagent and Grid Systems***, Vol.2, No.2, pp.101-114, 2006.

[56] **Bo An**, Chunyan Miao, Daijie Cheng. A coalition formation framework based on transitive dependence, ***IEICE Transactions on Information and Systems***, Vol.E88-D, No.12, pp.2672-2680, 2005.

Rigorously Refereed Conference Publications

[1] Lang Feng, Weihao Tan, Zhiyi Lyu, Longtao Zheng, Haiyang Xu, Ming Yan, Fei Huang, **Bo An**. Towards efficient online tuning of vlm agents via counterfactual soft reinforcement learning, *Proceedings of the 42nd International Conference on Machine Learning (**ICML'25**)*.

[2] Zhenghai Xue, Lang Feng, Jiacheng Xu, Kang Kang, Xiang Wen, Bo An, **Bo An**, Shuicheng YAN. Policy regularization on globally accessible states in cross-dynamics reinforcement learning, *Proceedings of the 42nd International Conference on Machine Learning (**ICML'25**)*.

[3] Qi Wei, Shuo He, Enneng Yang, Tingcong Liu, Haobo Wang, Lei Feng, **Bo An**. Representation surgery in model merging with probabilistic modeling, *Proceedings of the 42nd International Conference on Machine Learning (**ICML'25**)*.

[4] Shuo He, Zhifang Zhang, Feng Liu, Roy Ka-Wei Lee, **Bo An**, Lei Feng. A closer look at backdoor attacks on CLIP, *Proceedings of the 42nd International Conference on Machine Learning (**ICML'25**)*.

[5] Weihao Tan, Wentao Zhang, Xinrun Xu, Haochong Xia, Ziluo Ding, Boyu Li, Bohan Zhou, Junpeng Yue, Jiechuan Jiang, Yewen Li, Ruyi An, Molei Qin, Chuqiao Zong, Longtao Zheng, YuJie Wu, Xiaoqiang Chai, Yifei Bi, Tianbao Xie, Pengjie Gu, Xiyun Li, Ceyao Zhang, Long Tian, Chaojie Wang, Xinrun Wang, Börje F. Karlsson, **Bo An**, Shuicheng YAN, Zongqing Lu. Cradle: Empowering foundation agents towards general computer control, *Proceedings of the 42nd International Conference on Machine Learning (**ICML'25**)*.

[6] Jingtong Gao, Yewen Li, Shuai Mao, Peng Jiang, Nan Jiang, Yejing Wang, Qingpeng Cai, Fei Pan, Peng Jiang, Kun Gai, **Bo An**, Xiangyu Zhao. Generative auto-bidding with value-guided explorations, *Proceedings of the 48th International ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR'25**)*.

[7] Benquan Wang, Ruyi An, Jin-Kyu So, Sergei Kurdiumov, Eng Aik Chan, Giorgio Adamo, Yuhan Peng, Yewen Li, **Bo An**. Optical LEGO: An optical imaging dataset and benchmark at deeply subwavelength resolution, *Proceedings of the 2025 IEEE Conference on Computer Vision and Pattern Recognition (**CVPR'25**)*.

[8] Zhenghai Xue, **Bo An**, Shuicheng Yan. Policy optimization under imperfect human interactions with agent-gated shared autonomy, *Proceedings of the 2025 International Conference on Learning Representations (**ICLR'25**)*.

[9] Longtao Zheng, Zhiyuan Huang, Zhenghai Xue, Xinrun Wang, **Bo An**, Shuicheng Yan. AgentStudio: A toolkit for building general virtual agents, *Proceedings of the 2025 International Conference on Learning Representations (**ICLR'25**)*.

[10] Yi-Chen Li, Fuxiang Zhang, Wenjie Qiu, Lei Yuan, Chengxing Jia, Zongzhang Zhang, Yang Yu, **Bo An**. Q-Adapter: Customizing pre-trained LLMs to new preferences with forgetting mitigation, *Proceedings of the 2025 International Conference on Learning Representations (**ICLR'25**)*.

[11] Zhenghai Xue, Qingpeng Cai, Bin Yang, Lantao Hu, Peng Jiang, Kun Gai, **Bo An**. AURO: Reinforcement learning for adaptive user retention optimization in recommender systems, *Proceedings of the 2025 Web Conference (**WWW'25**)*.

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[5] Debarun Kar, Fei Fang, Francesco Delle Fave, Nicole Sintov, Arunesh Sinha, Aram Galstyan, **Bo An**, Milind Tambe. Learning bounded rationality models of the adversary in repeated Stackelberg security games, *Proceedings of the Adaptive and Learning Agents (ALA) Workshop, in conjunction with the 14th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2015.

[6] Jiarui Gan, **Bo An**. Game theoretic considerations for optimizing efficiency of taxi systems, *Proceedings of the AAAI-15 Workshop on Computational Sustainability*, 2015.

[7] Jiang Rong, Tao Qin, **Bo An**. Quantal response equilibrium for sponsored search auctions: Computation and inference, *Proceedings of The 10th workshop on Ad Auctions, in conjunction with the 15th ACM Conference on Electronic Commerce (EC)*, 2014.

[8] Milind Tambe, Albert Jiang, **Bo An**, Manish Jain. Computational game theory for security: Progress and challenges, *Proceedings of the AAAI Spring Symposium on Applied Computational Game Theory*, 2014.

[9] Jiarui Gan, **Bo An**. Minimum support size of the defender's strong Stackelberg equilibrium strategies in security games, *Proceedings of the AAAI Spring Symposium on Applied Computational Game Theory*, 2014.

[10] Yue Yin, **Bo An**, Yevgeniy Vorobeychik, Jun Zhuang. Optimal deceptive strategies in security games: A preliminary study, *Proceedings of the AAAI Spring Symposium on Applied Computational Game Theory*, 2014.

[11] **Bo An**, David Kempe, Christopher Kiekintveld, Eric Shieh, Satinder Singh, Milind Tambe, Yevgeniy Vorobeychik. Security games with limited surveillance: An initial report, *Proceedings of the AAAI Spring Symposium on Game Theory for Security, Sustainability and Health*, pp.2-8, 2012.

[12] Milind Tambe, **Bo An**. Game theory for security: A real-world challenge problem for multiagent systems and beyond, *Proceedings of the AAAI Spring Symposium on Game Theory for Security, Sustainability and Health*, pp.69-74, 2012.

[13] Yevgeniy Vorobeychik, **Bo An**, Milind Tambe. Adversarial patrolling games, *Proceedings of the AAAI Spring Symposium on Game Theory for Security, Sustainability and Health*, pp.91-98, 2012.

[14] **Bo An**, Manish Jain, Milind Tambe, Christopher Kiekintveld. Mixed-initiative optimization in security games: A preliminary report, *Proceedings of the AAAI Spring Symposium on Help Me Help You: Bridging the Gaps in Human-Agent Collaboration*, pp.8-11, March 2011.

[15] **Bo An**, Athanasios V. Vasilakos, Victor Lesser. Evolutionary stable resource pricing strategies, *Proceedings of the ACM SIGCOMM 2009 Conference* (poster session), March 2009.

International Tutorials

- ⋆ **Deep Reinforcement Learning for Quantitative Trading**, The 37th AAAI Conference on Artificial Intelligence (AAAI'23) Bridge Program.
- ⋆ **Advances in Game Theory for Security and Privacy**, The 18th ACM Conference on Electronic Commerce (EC'17), (with Fei Fang and Yevgeniy Vorobeychik).
- ⋆ **Game Theory for Security**, The Twenty-Eighth Conference on Artificial Intelligence (AAAI'14), (with Albert Xin Jiang, and Manish Jain).
- ⋆ **Game Theory for Security**, The Twenty-Seventh Conference on Artificial Intelligence (AAAI'13), (with Albert Xin Jiang, and Manish Jain).
- ⋆ **Computation of Stackelberg equilibria with Applications to security**, The 13th ACM Conference on Electronic Commerce (EC'12), (with Albert Xin Jiang and Christopher Kiekintveld).

Pending Patent

- ⋆ **Game-theoretic Resource Allocation for Protecting Large Public Events**: Yue Yin, Bo An, Manish Jain.
- ⋆ **Optimal Strategies in Security Games**: Milind Tambe, Fernando Ordonez, Rong Yang, Zhengyu Yin, Matthew Brown, Bo An, Christopher Kiekintveld. Filed on Apr 1, 2013 in USA, Publication number - WO2013176784 A1. More details at https://www.google.com/patents/WO2013176784A1.
- ⋆ **Method and Apparatus for Negotiation Management in Data Processing Systems**. Bo An, Fred Douglis, Brad Fawcett, Anton Riabov, Fan Ye. Filed on Apr 30, 2008 in USA, Granted on Feb 18, 2014, Publication number - US8656403 B2. More details at https://www.google.com/patents/US8656403.

Fielded and Deployed Research

- ⋆ **PAWS (Protection Assistant for Wildlife Security)**: PAWS is being tested since 2014 in southeast Asia for assistance in protecting endagered wildlife against poachers. PAWS generates patrol routes by solving a large-scale Stackelberg game, while taking complex geographic constraints into account, with payoff uncertainties and behavior models of poachers.
- ⋆ **PROTECT (Port Resilience Operational / Tactical Enforcement to Combat Terrorism)**: We have successfully demonstrated PROTECT for randomizing schedules for the US Coast Guard in the port of Boston. PROTECT solves Stackelberg games to provide mixed strategies which allows it to randomize patrols for the US Coast Guard, taking into account weights of different targets and reactions of potential adversaries.
- ⋆ **IRIS (Intelligent Randomization In Scheduling)**: IRIS has been deployed since October 2009 for randomizing schedules for allocation of Federal Air Marshals (FAMS) to some sectors of international flights. IRIS uses the fastest known algorithm for solving Stackelberg games to provide mixed strategies which allows it to randomize schedules for the FAMS.
- ⋆ **CASA (Collaborative Adaptive Sensing of the Atmosphere)**: CASA is a new paradigm for detecting and predicting hazardous weather achieved through a distributed, collaborative, adaptive sensing architecture. Our approach of distributed resource allocation based automated negotiation was used in the testbed built in southwestern Oklahoma to allocate sensing resources from 2009.
- ⋆ **Negotiation based Resource Allocation in Distributed Stream Processing**: I have built a negotiation management system for dynamic resource allocation and the system is used in IBM's collaborative stream processing system (System S).

Selected Invited Talks

Invited Conference Talks:

- ⋆ From RL-based to LLM-powered Agents, The 1st International Workshop on AI Agent Reasoning and Decision-Making, Feb 25, 2025.
- ⋆ Deep Reinforcement Learning for Quantitative Trading, The AI in Central Banking Conference, December 10-11, 2024, online.

- ⋆ From Algorithmic and RL-based to LLM-powered Agents, The 2024 Shenzhen International Conference on Frontiers of Statistics and Data Science, December 7-8, 2024, Shenzhen, China.
- ⋆ From Algorithmic and RL-based to LLM-powered Agents, The 25th International Conference on Principles and Practice of Multi-Agent Systems, November 18-24, 2024, Kyoto, Japan.
- ⋆ Deep Reinforcement Learning for Quantitative Trading, 2024 Vaduz Roundtable on Financial System 2030, September 2024, Vaduz, Liechtenstein.
- ⋆ From Algorithmic and RL-based to LLM-powered Agents, 2024 International Joint Conference on Artificial Intelligence (IJCAI'24), 3 Aug 2024 – 9 Aug 2024, Jeju, South Korea.
- ⋆ Deep Reinforcement Learning for Quantitative Trading, The 4th International Conference on Financial Technology, May 31 - June 2, Nanjing China.
- ⋆ Recent Progress on Reinforcement Learning for Quantitative Trading, AAAI'24 Bridge Program on AI for Financial Services, February 20, Vancouver, Canada.
- ⋆ Towards Foundation Agents: Autonomous Agents, AI Agents, and Agent Society, The 2023 China Reinforcement Learning Conference, November 24-26, Suzhou, China.
- ⋆ Reinforcement Learning for Handling Complex Multi-agent Interactions, Cambridge Markov Decision Process and Reinforcement Learning Workshop, September 22-23 2023, Cambridge University, UK.
- ⋆ Deep Reinforcement Learning for Quantitative Trading, The 2023 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'23) Finance Day, August 7, Long Beach, USA.
- ⋆ Deep Reinforcement Learning for Quantitative Trading, The 2023 China Multi-agent Systems Conference, May 19-20, Changsha, China.
- ⋆ Deep Learning for Solving Large Scale Complex Games, *Decision Making in Multi-Agent Systems Workshop at IROS 2022*, October 27, Kyoto, Japan.
- ⋆ Deep Learning for Solving Large Scale Complex Games, *2022 International Conference on Big Data, Artificial Intelligence and Internet of Things Engineering*, July 15-17 2022.
- ⋆ Deep Learning for Solving Large Scale Complex Games, *2022 International Symposium on From Statistics to Artificial Intelligence-Reinforcement Learning*, July 7-9 2022, Shanghai, China.
- ⋆ Learning to Coordinate in Complex Environments, *Cooperative AI Workshop at NeurIPS 2021*, December 14, Vancouver, Canada.
- ⋆ Deep Learning for Solving Large Scale Complex Games, *2021 Beijing Academy of Artificial Intelligence (BAAI) Conference*, June 1-4 2021, Beijing, China.
- ⋆ When AI Meets Game Theory, *The 22nd International Conference on Principles and Practice of Multi-Agent Systems (PRIMA'20)*, November, 18-20, 2020, Nagoya, Japan.
- ⋆ Trend and Progress in Distributed Artificial Intelligence, *Sino-Singapore Summit for Digital Economy and Artificial Intelligence*, November20 2020.
- ⋆ When AI Meets Game Theory, *2020 Intelligent Decision Making Forum at Chinese Academy of Sciences*, September 19-20 2020, Beijing, China.
- ⋆ Reinforcement Learning in Competitive Environment, *SAMSI (Statistical and Applied Mathematical Sciences Institute) Numerical Analysis for Data Science Opening Workshop*, August 26-27 2020, North Carolina, USA.
- ⋆ Reinforcement Learning in Competitive Environment, *2020 Beijing Academy of Artificial Intelligence (BAAI) Conference*, June 21-24 2020, Beijing, China.
- ⋆ When AI Meets Game Theory, *2019 CCF International Conference on Artificial Intelligence (CCF-ICAI)*, August 2019, Xuzhou, China.
- ⋆ When AI Meets Game Theory, *2019 ShanghaiTech Symposium on Information Science and Technology (ASSIST)*, July 2019, Shanghai, China.
- ⋆ Solving Large Scale Games, *2018 National Conference on Big Data and Artificial Intelligence*, July 2018, Chongqing, China.

- ⋆ Solving Large Scale Games, *2018 International Workshop on Complexity & Algorithms*, May 2018, Beijing, China.
- ⋆ Recent Progress on Computational Game Theory for Security, *Algorithm Game Theory and Internet Economics Workshop*, held by Tsinghua Sanya International Mathematics Forum, March 2018, Sanya, China.
- ⋆ Game theoretic analysis of security and sustainability, *Early Career Spotlight Talk at The Twenty-sixth International Joint Conference on Artificial Intelligence (IJCAI'17)*, August 21, 2017, Melbourne, Australia.
- ⋆ Game theoretic analysis of security and sustainability, *2017 International Workshop on Conflict Resolution in Decision Making* at IJCAI'17, August 21, 2017, Melbourne, Australia.
- ⋆ Recent Progress on Computational Game Theory for Security, *The 1st International Workshop on AI in Security* at IJCAI'17, August 20, 2017, Melbourne, Australia.
- ⋆ Multi-agent Systems Research: Current Status and Challenges, *The 2017 China Computer Federation Conference on Artificial Intelligence (CCFAI)*, August 2017, Kunming, China.
- ⋆ Algorithms for Solving Incomplete Information Games, *2017 Workshop on Evolutionary COmputation and LEarning (ECOLE)*, May 2017, Xian, China.
- ⋆ Network Flow Interdiction, *The 2017 Workshop on Adversarial Reasoning in Multi-agent Systems (ADVERSE)*, May 2017, Brazil.
- ⋆ Game Theory Considerations in Computational Sustainability, *The 10th International Workshop on Agent-based Complex Automated Negotiations (ACAN)*, May 2017, Brazil.
- ⋆ Game Theory to Protect Wild Life, *2017 Winter School on Complexity Science*, 9-15 March 2017, Singapore.
- ⋆ Computational Game Theory for Security, *The 2017 Joint Korea-Singapore Workshop on Discrete Mathematics*, Feb 17-19, 2017, Singapore.
- ⋆ Recent Progress on Computational Game Theory for Security, *The 17th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'2016)*, Yangzhou, October 2016.
- ⋆ Multi-agent Systems Research: Recent Progresses and Future Directions, *The 2016 International Workshop on Autonomous Agents and Multiagent Systems*, Guilin, May 2016.
- ⋆ Game Theory Considerations in Computational Sustainability, 2015 International Joint Agents Workshop and Symposium (IJAWS), Ishikawa, Japan, October 2015.
- ⋆ Adversary Behavior Modeling in Security Games: Surveillance and New Application Domains, *The second conference on Validating Models of Adversary Behavior*, August 2015, Buffalo/Niagara Falls, NY, USA.
- ⋆ Game Theory for Security: Challenges and Progress, *The 2014 IEEE 7th Joint International Information Technology and Artificial Intelligence Conference*, December 2014.
- ⋆ Multi-agent Systems Research: History and Current Status, *The 2014 China National Computer Congress (CNCC)*, October 2014.
- ⋆ Game Theory for Age Friendly Computing, *The 1st International Conference on Ageless Aging (ICAA 2013)*, June 2013.
- ⋆ Applying Game Theory and Data Mining for Improving Efficiency of Taxi Systems, *2013 International Workshop on Agents & Data Mining Interaction (ADMI-13)*, May 2013.
- ⋆ Application of Game theory for Security, *The 4th Chinese Conference on Agent Theory and Application (Agent2012)*, with Zhongzhi Shi, August 2012.
- ⋆ Automated Negotiation for Complex Multi-Agent Resource Allocation, *The 10th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'11)*, May 2011.

Invited Talks at Universities:

- ⋆ From Algorithmic and RL-based to LLM-powered Agents, Rutgers University, November 2024.
- ⋆ From Algorithmic and RL-based to LLM-powered Agents, Harvard University, October 2024.
- ⋆ Towards Foundation Agents: Autonomous Agents, AI Agents, and Agent Society, Xian Jiaotong University, July 2024.

⋆ Towards Foundation Agents: Autonomous Agents, AI Agents, and Agent Society, Xidian University, July 2024.

⋆ Distributed AI: Scalability, Efficiency, and Generalizability, Southern University of Science and Technology, August 2023.

⋆ Distributed AI: Scalability, Efficiency, and Generalizability, Xian Jiaotong University, July 2023.

⋆ Distributed AI: Scalability, Efficiency, and Generalizability, Southwest Jiaotong University, June 2023.

⋆ Distributed AI: Scalability, Efficiency, and Generalizability, Sichuan University, June 2023.

⋆ Distributed AI: Scalability, Efficiency, and Generalizability, Fudan University, June 2023.

⋆ Distributed AI: Scalability, Efficiency, and Generalizability, Shanghai Jiao Tong University, June 2023.

⋆ Distributed AI: Scalability, Efficiency, and Generalizability, Beijing Academy of Artificial Intelligence, May 2023.

⋆ Distributed AI: Scalability, Efficiency, and Generalizability, Beijing Academy of Artificial Intelligence, May 2023.

⋆ Distributed AI: Scalability, Efficiency, and Generalizability, Peking University, May 2023.

⋆ Reinforcement Learning for Quantitative Decision Making in Financial Markets, Asian Institute of Digital Financial Technology, National University of Singapore, April 7, 2023.

⋆ When AI Meets Game Theory, Zhejiang Lab, June 2021.

⋆ When AI Meets Game Theory, National University of Singapore, April 2021.

⋆ When AI Meets Game Theory, Southeast University, December 2019.

⋆ When AI Meets Game Theory, Xian Jiaotong University, May 2019.

⋆ When AI Meets Game Theory, Nanjing University, May 2019.

⋆ Solving Large Scale Games, University of Science and Technology of China, June 2018.

⋆ Computational Game Theory for Security: Recent Progresses and Future Directions, Dalian University of Technology, June 2018.

⋆ HogRider: Champion Agent of Microsoft Malmo Collaborative AI Challenge, University of Southern California, January 2018.

⋆ HogRider: Champion Agent of Microsoft Malmo Collaborative AI Challenge, Nanjing University, December 2017.

⋆ HogRider: Champion Agent of Microsoft Malmo Collaborative AI Challenge, Southeast University, December 2017.

⋆ Computational Game Theory for Security: Recent Progresses and Future Directions, Alibaba, Hangzhou, July 2017.

⋆ Computational Game Theory for Security: Recent Progresses and Future Directions, Sun Yat-sen University, May 2017.

⋆ Computational Game Theory for Security: Recent Progresses and Future Directions, Xidian University, May 2017.

⋆ Computational Game Theory for Security: Recent Progresses and Future Directions, University of Science and Technology of China, March 2017.

⋆ Computational Game Theory for Security: Recent Progresses and Future Directions, Hefei University of Technology, February 2017.

⋆ Computational Game Theory for Security: Recent Progresses and Future Directions, Southwest Jiaotong University, December 2016.

⋆ Computational Game Theory for Security: Recent Progresses and Future Directions, University of Oxford, November 2016.

- ⋆ Computational Game Theory for Security: Recent Progresses and Future Directions, University of Southampton, November 2016.
- ⋆ Computing Optimal Monitoring Strategy for Detecting Terrorist Plots, University of Southern California, January 2016.
- ⋆ Game Theory Considerations in Computational Sustainability, Nagoya Institute of Technology, Japan, September 2015.
- ⋆ Game Theory Considerations in Computational Sustainability, Microsoft Research Redmond, July 2015.
- ⋆ Game Theory for Security: Challenges and Recent Progress, Sichuan University, July 2015.
- ⋆ Game Theory Considerations in Computational Sustainability, Microsoft Research Redmond, July 2015.
- ⋆ Optimal Electric Vehicle Charging Station Placement, Nanjing University, June 2015.
- ⋆ Optimal Electric Vehicle Charging Station Placement, Southeast University, June 2015.
- ⋆ Game Theory for Security: Some Recent Progress, Nanjing University of Aeronautics and Astronautics, June 2015.
- ⋆ Game Theory for Security: Some Recent Progress, Southeast University, December 2014.
- ⋆ Game Theory for Security and E-commerce, ALIBABA (Beijing), December 2014.
- ⋆ Game Theory for Security: Some Recent Progress, Tsinghua University, December 2014.
- ⋆ Computing Optimal Pricing Schemes to Improve Efficiency of Taxi Systems, Nanjing University, December 2013.
- ⋆ Game Theory for Solving Societal Challenges: Security and Sustainability, Southeast University, December 2013.
- ⋆ Game Theory for Solving Societal Challenges: Security and Sustainability, Microsoft Research Asia, August 2013.
- ⋆ Game Theory for Solving Societal Challenges: Security and Sustainability, HeFei University of Technology, June 2013.
- ⋆ Game Theory for Solving Societal Challenges: Security and Sustainability, University of Science and Technology of China, June 2013.
- ⋆ Game Theory for Solving Societal Challenges: Security and Sustainability, Fudan University, June 2013.
- ⋆ Game Theory for Solving Societal Challenges: Security and Sustainability, Southwest Jiaotong University, May 2013.
- ⋆ Next Generation Applications of Security Games: Challenges and Progress, Shanghai Jiao Tong University, December 2012.
- ⋆ Next Generation Applications of Security Games: Challenges and Progress, Tsinghua University, October 2012.
- ⋆ Next Generation Applications of Security Games: Challenges and Progress, Nanjing University, September 2012.
- ⋆ Next Generation Applications of Security Games: Challenges and Progress, Suzhou University, September 2012.
- ⋆ Equilibrium refinement in security games, Peking University, May 2011.
- ⋆ Equilibrium refinement in security games, University of Electronic Science and Technology of China, May 2011.
- ⋆ Automated Negotiation for Complex Multi-Agent Resource Allocation, Singapore Management University, June 2010.

Research Funding

- ⋆ "Towards Real-World Deployment of Pursuit-Evasion Games", 1/11/24-31/10/2026, MOE AcRF Tier 1 Grant, Principal Investigator.
- ⋆ "COMPACT: Continuous Megacity-Scale Pandemic Prediction and Intervention", 1/7/24-30/6/2027, MOE AcRF Tier 2 Grant, Principal Investigator.
- ⋆ "MATAI: An AI-powered Generalist Material Discovery Platform", 1/7/23-30/6/2025, National Research Foundation (NRF), Lead Principal Investigator.
- ⋆ "CyberSG R&D Programme Office", 1/8/23-31/7/2027, National Research Foundation (NRF), Lead Principal Investigator.
- ⋆ "TradeMaster: Reinforcement Learning-based Quantitative Trading Toolkit", 1/7/22-30/6/2025, NRF/Industry Alignment Fund Pre-Positioning Programme, Lead Principal Investigator.
- ⋆ "Modelling of DSSI Modalities and Development Neural Networks for DSSI", 01/12/20-30/11/25, NRF Competitive Research Programme, Co-Principal Investigator.
- ⋆ "New Directions in Adversarial Machine Learning: From Theory to Applications", 1/10/19-30/9/2022, AI Singapore, Principal Investigator.
- ⋆ "Improving Trustworthiness of Real-world AI systems through Adversarial Attack and Effective Defense", 1/10/19-31/3/2022, National Research Foundation (NRF) NSOE, Principal Investigator.
- ⋆ "Large Scale Scheduling for Patrol and Interdiction against Criminals", 1/10/19-30/9/2021, Singtel - NTU Corporate Lab, Principal Investigator.
- ⋆ "Large Scale Influence Maximization with Uncertain States and Networks", 1/9/19-31/8/2021, MOE AcRF Tier 1 Grant, Principal Investigator.
- ⋆ "Multi-Agent Reinforcement Learning for Combinatorial Ranking Policy in Dynamic Environment", 1/10/18-30/09/2020, Alibaba AIR Programme, Principal Investigator.
- ⋆ "Adversarial Machine Learning in Big Data Era", 1/3/18-28/2/2021, NTU/WASP Programme, Principal Investigator.
- ⋆ "Anti-spam Impression Allocation and Ranking Policy Robustness Evaluation", 1/1/18-31/12/2018, Alibaba AIR Programme, Principal Investigator.
- ⋆ "Dynamic Electronic Toll Collection for Traffic Congestion Alleviation", 1/3/18-31/8/2019, MOE AcRF Tier 1 Grant, Principal Investigator.
- ⋆ "ADL+:A Digital Toolkit for Cognitive Assessment and Intervention", MOH National Innovation Challenge On Active and Confident Ageing, 15/3/17-14/3/2020, Co-Principal Investigator.
- ⋆ "Modelling, Analysis and Computation for Combating Multiple Cooperative Adversaries", 1/3/17-28/2/2018, MOE AcRF Tier 1 Grant, Principal Investigator.
- ⋆ "Improving Cybersecurity through Optimal Policy Design and Human Behaviour Modelling", NRF National Cybersecurity R&D (NCR) Programme, 1/1/17-31/12/2019, Principal Investigator.
- ⋆ "Energy Harvesting Sensors And User Behaviour Use Cases For Smart Living Solutions", Delta - NTU Corporate Lab, 1/11/16-31/10/2019, Principal Investigator.
- ⋆ "Optimal Pricing for Competitive Cloud Markets with Incomplete Information", 2015 Microsoft Research Asia Collaborative Research Program, 1/5/16-30/4/2018, Principal Investigator.
- ⋆ "Cyber Security Solutions for Smart Traffic Control Systems", NRF National Cybersecurity R&D (NCR) Programme, 2/3/16-31/12/2018, Principal Investigator.
- ⋆ "Some Key Research Problems In Multi-Agent Systems", Nanyang Assistant Professorship (NAP) Grant, 1/10/14-30/9/2020, Principal Investigator.
- ⋆ "Optimal Security Resource Allocation for Protecting Large Public Events", 1/3/14-28/2/2017, MOE AcRF Tier 1 Grant, Principal Investigator.
- ⋆ Start-up Grant from Nanyang Technological University, 1/7/13-31/3/17, Principal Investigator.

- ⋆ "Automated negotiation theory for resource allocation in complex multiagent systems", 1/1/13-12/31/2015, National Natural Science Foundation of China, Principal Investigator.
- ⋆ "Game theory for security", 1/1/13-12/31/2015, Starting Research Fund, Institute of Computing Technology, Chinese Academy of Sciences, Principal Investigator.

Professional Services

Leadership:

- ⋆ **International Joint Conferences on Artificial Intelligence (IJCAI)** Board of Trustees, 2024-2030, elected position. Starting from 1969, IJCAI has remained the premier conference bringing together the international AI community to communicate the advances and achievements of artificial intelligence research. IJCAI also acts as the official host for the editorial operations of the Artificial Intelligence journal. IJCAI is governed by the Board of Trustees which consists of 12 elected members.
- ⋆ **International Foundation of Autonomous Agents and Multi-Agent Systems (IFAAMAS)** board of directors, 2014-2020, elected position. Chair of the Award Committee since 2016. The IFAAMAS Board of Directors consists of 27 members, each elected to a six-year term. IFAAMAS is a non-profit organization whose purpose is to promote science and technology in the areas of artificial intelligence, autonomous agents and multiagent systems.
- ⋆ **IJCAI'18 Advisory Committee** I was invited to become a member of the IJCAI'18 Advisory Committee, which serves as a "sounding board" by the Conference Committee on a variety of key issues. The Advisory Committee will be asked for opinions or advice on matters of importance to the successful outcome of IJCAI'18, and as part of the Executive Committee of the current conference, they have a vote in deciding on Program Chair and Conference Chair of IJCAI-22 as well as the location of IJCAI-22.

Award Committee Chair:

- ⋆ 2015 **International Foundation of Autonomous Agents and Multi-Agent Systems (IFAAMAS)** Victor Lesser Distinguished Dissertation Award. Committee Members: Elisabeth Andre, Boi Faltings, Maria Gini, Sandip Sen, Makoto Yokoo, Michael Winikoff.

Editorial Boards:

- ⋆ Jan 2025- **IEEE Intelligent Systems**, Editor-in-Chief.
- ⋆ Sep 2021- **ACM Transactions on Autonomous and Adaptive Systems**, Associate editor.
- ⋆ Jan 2021- **Artificial Intelligence**, Associate editor.
- ⋆ Jan 2020- **Annals of Mathematics and Artificial Intelligence**, Associate editor.
- ⋆ Feb 2019- **ACM Transactions on Intelligent Systems and Technology**, Associate editor.
- ⋆ August 2018- Dec 2024 **IEEE Intelligent Systems**, Associate Editor-in-Chief.
- ⋆ July 2016- **Journal of Artificial Intelligence Research (JAIR)**, editorial board member.
- ⋆ 2015- **Journal of Autonomous Agents and Multi-agent Systems (JAAMAS)**, Associate editor.
- ⋆ 2016-2020 **Future Generation Computer Systems**, Associate editor.

Event Organization

- ⋆ Program Chair for **The 36th International Joint Conference on Artificial Intelligence (IJCAI)**, 2027.
- ⋆ Associate Program Chair for **The 40th AAAI Conference on Artificial Intelligence (AAAI'26)**, Singapore, 2026.
- ⋆ Program Co-chair for The 6th ACM International Conference on AI in Finance (ICAIF), Nov 15 - Nov 18, 2025.
- ⋆ General Co-chair for **The 2024 International Conference on Distributed Artificial Intelligence (DAI)**, Singapore, December 18 – Dec 22, 2024.
- ⋆ Tutorial Co-chair for **The 38th AAAI Conference on Artificial Intelligence (AAAI)**, Vancouver, Canada, February 2024.

- ⋆ General Co-chair for **The 2023 International Conference on Distributed Artificial Intelligence (DAI)**, Singapore, Nov 30 – Dec 2, 2023.
- ⋆ Scientific Programme Committee Co-chair for **International Conference on AI in Medicine**, Singapore, August 5-7, 2023.
- ⋆ Co-chair for **AAAI 2023 Inaugural Summer Symposium on Artificial Intelligence for FinTech**, Singapore, July 18-19, 2023.
- ⋆ General Co-chair for **The 22nd International Conference on Autonomous Agents and Multiagent Systems (AAMAS)**, London, May 29 -June 2, 2023.
- ⋆ Associate Program Chair for **The 32nd International Joint Conference on Artificial Intelligence (IJCAI'23)**, Cape Town, South Africa, August 19-25, 2023.
- ⋆ Program Co-chair for **The 2022 International Conference on Intelligent Information Processing (IIP)**, May 27 - May 30, 2022.
- ⋆ Demonstration Co-chair for **The 36th AAAI Conference on Artificial Intelligence (AAAI)**, Vancouver, Canada, February 22 - March 1, 2022.
- ⋆ Blue Sky Ideas Track co-Chair for **The 20th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)**, New Zealand, May 9 - May 13, 2022.
- ⋆ General Co-chair for **The 5th International Conference on Crowd Science and Engineering (ICCSE 2021)**, China, October 2021.
- ⋆ Program Co-chair for **The 19th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)**, New Zealand, May 13 - May 17, 2020.
- ⋆ Student Abstract Co-chair for **The 34th AAAI Conference on Artificial Intelligence (AAAI)**, New York, USA, February 6-12, 2020.
- ⋆ General Co-Chair for **The 2019 International Conference on Distributed Artificial Intelligence (DAI'19)**, Beijing, China, October 2019.
- ⋆ Innovative Applications Co-chair for **The 18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)**, Montreal, Canada, May 13 - May 17, 2019.
- ⋆ Tutorial Co-chair for **The Twenty-Seventh International Joint Conference on Artificial Intelligence (IJCAI'18)**, Stockholm, Sweden, July 2018.
- ⋆ Tutorial Co-chair for **The Seventeenth International Conference on Autonomous Agents and Multiagent Systems (AAMAS'18)**, Stockholm, Swed en, July 2018.
- ⋆ Program Co-Chair for **The 16th International Conference on Practical Applications of Agents and Multi-Agent Systems (PAAMS'18)**, Toledo, Spain, 13-15 June 2018.
- ⋆ General Co-Chair for **The 2nd IEEE International Conference on Agents (ICA'17)**, Beijing, China, July 2017.
- ⋆ Program Co-Chair for **The 8th Conference on Decision and Game Theory for Security (GameSec'17)**, Vienna, Austria, October 2017.
- ⋆ Program Co-Chair for **The 19th International Conference on Principles and Practice of Multi-Agent Systems (PRIMA'17)**, Nice, France, Nov. 13th - Nov. 17th, 2017.
- ⋆ Scholarship Co-chair for **The Sixteenth International Conference on Autonomous Agents and Multiagent Systems (AAMAS)**, May 2017.
- ⋆ Co-chair for **AAAMS'17 Workshop on Issues with Deployment of Emerging Agent-based Systems (IDEAS'2017)**, May 8 - May 12, 2017.
- ⋆ Program Chair for **The 2016 International Conference on Crowd Science and Engineering (ICCSE¡¯16)**, Vancouver, Canada, July 28 - 31 July 2016.
- ⋆ Exhibition Chair for **The Fifteenth International Conference on Autonomous Agents and Multiagent Systems (AAMAS)**, May 9 - May 13, 2016.

- ⋆ School Co-chair for **The 19th International Conference on Principles and Practice of Multi-Agent Systems (PRIMA)**, August 22-26, 2016.
- ⋆ Co-chair for **AAAMS'16 Workshop on Issues with Deployment of Emerging Agent-based Systems (IDEAS'2016)**, May 9 - May 13, 2016.
- ⋆ Co-chair for **2016 International Summer School on Autonomous Agents and Multiagent Systems**, Singapore, May 6 - May 8, 2016.
- ⋆ Program co-Chair for **The 2015 IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT)**, Singapore, December 6-9, 2015.
- ⋆ Co-chair for **IJCAI'15 Workshop on Behavioral, Economic and Computational Intelligence for Security**, Buenos Aires, July 25 - 27, 2015.
- ⋆ Co-chair for **AAAMS'15 Workshop on Issues with Deployment of Emerging Agent-based Systems (IDEAS'2015)**, May 4 - May 8, 2015.
- ⋆ Co-chair for **AAAI 2015 Spring Symposium on Applied Computational Game Theory**, Stanford University, March 23-25, 2015.
- ⋆ Workshop Chair for **The International Conference on Behavior, Economic and Socio-Cultural Computing (BESC)**, Shanghai, China, October 30 - November 2, 2014.
- ⋆ Demonstrations Chair for **The Thirteenth International Conference on Autonomous Agents and Multiagent Systems (AAMAS)**, Paris, France, May 5 - May 9, 2014.
- ⋆ Co-chair for **AAAI 2014 Spring Symposium on Applied Computational Game Theory**, Stanford University, March 24-26, 2014.
- ⋆ PC Co-chair for **2014 International Workshop on Agent & Data Mining Interaction (ADMI'14)**, Paris, France, May 5 - May 9, 2014.
- ⋆ Sole Organizer for 2013 **IFAAMAS Agent and Multiagent System School**. Invited Speakers: Craig Boutilier, Kevin Leyton-Brown, Francesca Rossi, Milind Tambe, Makoto Yokoo, and Shlomo Zilberstein, Beijing, August 10 - August 12, 2013.
- ⋆ Innovative Applications Chair for **The Twelfth International Conference on Autonomous Agents and Multiagent Systems (AAMAS)**, Minnesota, USA, May 6 - May 10, 2013.
- ⋆ Poster and Demonstration Chair for **The Sixth Conference on Artificial General Intelligence (AGI)**, Beijing, July 31 - August 3, 2013
- ⋆ Co-chair for **AAAI 2012 Spring Symposium on Game Theory for Security, Sustainability and Health**, Stanford University, March 26-28, 2012.
- ⋆ Co-organizer for **Use-inspired Agents and Multiagent Systems Workshop**, University of Southern California, March 2011.

Conference Program Committees:

- ⋆ 2025 The 25th ACM Conference on Economics and Computation (EC), Senior PC
- ⋆ 2025 The 38th Conference on Artificial Intelligence (AAAI'25), Area Chair
- ⋆ 2024 The 38th Conference on Neural Information Processing Systems (NeurIPS'24), Area Chair
- ⋆ 2024 The 24th ACM Conference on Economics and Computation (EC), Senior PC
- ⋆ 2024 The 5th ACM International Conference on AI in Finance, Senior PC
- ⋆ 2024 The 37th Conference on Artificial Intelligence (AAAI'24), Area Chair
- ⋆ 2023 The 37th Conference on Neural Information Processing Systems (NeurIPS'23), Area Chair
- ⋆ 2023 The 4th ACM International Conference on AI in Finance (ICAIF'23), Senior PC
- ⋆ 2023 The 14th Conference on Decision and Game Theory for Security (GAMESEC)
- ⋆ 2023 The 24th ACM Conference on Economics and Computation (EC)
- ⋆ 2023 The 26th European Conference on Artificial Intelligence (ECAI'23), Area Chair

- ⋆ 2023 The 36th Conference on Artificial Intelligence (AAAI'23), Area Chair
- ⋆ 2023 The 2023 International Conference on Automated Planning and Scheduling (ICAPS'23)
- ⋆ 2021 The 2022 International Conference on Distributed Artificial Intelligence (DAI'22)
- ⋆ 2022 The 36th Conference on Neural Information Processing Systems (NeurIPS'22), Area Chair
- ⋆ 2022 The 31st International Joint Conference on Artificial Intelligence (IJCAI'22), Senior PC
- ⋆ 2022 The 35th Conference on Artificial Intelligence (AAAI'22), Senior PC
- ⋆ 2022 The 13rd Conference on Decision and Game Theory for Security (GAMESEC)
- ⋆ 2022 The 23rd ACM Conference on Economics and Computation (EC)
- ⋆ 2021 The 12nd Conference on Decision and Game Theory for Security (GAMESEC)
- ⋆ 2021 The 2021 International Conference on Distributed Artificial Intelligence (DAI'21)
- ⋆ 2021 The 19th International Conference on Practical Applications of Agents and multi-agents systems (PAAMS'21)
- ⋆ 2021 The 37th Conference on Uncertainty in Artificial Intelligence (UAI)
- ⋆ 2021 The 22nd ACM Conference on Economics and Computation (EC)
- ⋆ 2021 The 30th International Joint Conference on Artificial Intelligence (IJCAI'21), Senior Area Chair
- ⋆ 2021 The Web Conference (WWW'21)
- ⋆ 2021 The 15th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'16), Senior PC
- ⋆ 2022 The 34th Conference on Artificial Intelligence (AAAI'21), Senior PC
- ⋆ 2020 The 21st ACM Conference on Economics and Computation (EC)
- ⋆ 2020 The 16th Conference on Web and Internet Economics (WINE'20)
- ⋆ 2020 The Twenty-Ninth International Joint Conference on Artificial Intelligence (IJCAI'20), Senior PC
- ⋆ 2020 The 33rd Conference on Artificial Intelligence (AAAI'20), Senior PC
- ⋆ 2020 The 2020 International Conference on Distributed Artificial Intelligence (DAI'20)
- ⋆ 2020 The 27th European Conference on Artificial Intelligence (ECAI'20), area chair
- ⋆ 2020 International Joint Conference on Theoretical Computer Science (IJTCS)
- ⋆ 2020 The 18th International Conference on Practical Applications of Agents and multi-agents systems (PAAMS'20)
- ⋆ 2019 The 22nd International Conference on Principles and Practice of Multi-Agent Systems (PRIMA'19), Senior PC
- ⋆ 2019 The 10th Conference on Decision and Game Theory for Security (GAMESEC)
- ⋆ 2019 The 20th ACM Conference on Economics and Computation (EC)
- ⋆ 2019 The 2019 ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS'19)
- ⋆ 2019 The Twenty-Eighth International Joint Conference on Artificial Intelligence (IJCAI'19), Senior PC
- ⋆ 2019 The 32nd Conference on Artificial Intelligence (AAAI'19), Senior PC
- ⋆ 2019 The 10th Conference on Decision and Game Theory for Security (GAMESEC)
- ⋆ 2019 The 17th International Conference on Practical Applications of Agents and multi-agents systems (PAAMS'19)
- ⋆ 2018 The 21st International Conference on Principles and Practice of Multi-Agent Systems (PRIMA'18), Senior PC
- ⋆ 2018 The Twenty-Seventh International Joint Conference on Artificial Intelligence (IJCAI'18), Senior PC
- ⋆ 2018 The 31st Conference on Artificial Intelligence (AAAI'18), Senior PC

- ⋆ 2018 The 17th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'18), Blue Sky Ideas Track
- ⋆ 2018 The 2018 ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS'18)
- ⋆ 2018 The 10th IFIP International Conference on Intelligent Information Processing (IIP'18)
- ⋆ 2017 The 13th Conference on Web and Internet Economics (WINE'17)
- ⋆ 2017 ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD'17)
- ⋆ 2017 The Twenty-Sixth International Joint Conference on Artificial Intelligence (IJCAI'17), Senior PC
- ⋆ 2017 The 30th Conference on Artificial Intelligence (AAAI'17)
- ⋆ 2017 The 16th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'17)
- ⋆ 2017 The 15th International Conference on Practical Applications of Agents and multi-agents systems (PAAMS'17)
- ⋆ 2016 International Conference on Behavioral, Economic and Socio-Cultural Computing (BESC'16)
- ⋆ 2016 The 7th Conference on Decision and Game Theory for Security (GAMESEC)
- ⋆ 2016 International Conference on Agents (ICA)
- ⋆ 2016 The 17th ACM Conference on Electronic Commerce (EC)
- ⋆ 2016 IEEE/WIC/ACM International Conference on Web Intelligence (WI'16)
- ⋆ 2016 The 19th International Conference on Principles and Practice of Multi-Agent Systems (PRIMA'16), Senior PC
- ⋆ 2016 The Ninth Conference on Artificial General Intelligence (AGI)
- ⋆ 2016 The Twenty-Fifth International Joint Conference on Artificial Intelligence (IJCAI'16), Senior PC
- ⋆ 2016 The 15th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'16), Senior PC
- ⋆ 2016 The Twenty-Ninth Conference on Artificial Intelligence (AAAI'16)
- ⋆ 2016 The 14th International Conference on Practical Applications of Agents and multi-agents systems (PAAMS'16)
- ⋆ 2015 The 16th ACM Conference on Electronic Commerce (EC)
- ⋆ 2015 The Twenty-Fourth International Joint Conference on Artificial Intelligence (IJCAI'15), Senior PC
- ⋆ 2015 The 14th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'15), Senior PC
- ⋆ 2015 Twenty-Eighth Conference on Artificial Intelligence (AAAI'15)
- ⋆ 2015 The 18th international conference on Principles and Practice of Multi-Agent Systems (PRIMA'15), Senior PC
- ⋆ 2015 The 2015 IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT) Special Session on Agents in Urban Computing and Engineering
- ⋆ 2015 International Conference on Behavioral, Economic and Socio-Cultural Computing (BESC'15)
- ⋆ 2015 The Eighth Conference on Artificial General Intelligence (AGI)
- ⋆ 2015 Intelligent Robotics and Multi-Agent Systems (IRMAS) track of the ACM Symposium on Applied Computing (SAC'15)
- ⋆ 2014 Twenty-Eighth Conference on Artificial Intelligence (AAAI'14)
- ⋆ 2014 The 21st European Conference on Artificial Intelligence (ECAI'14)
- ⋆ 2014 The 13th International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'14)

- ⋆ 2014 The 17th international conference on Principles and Practice of Multi-Agent Systems (PRIMA'14), Senior PC
- ⋆ 2014 First Annual Symposium and Bootcamp on the Science of Security (HotSoS'14)
- ⋆ 2014 International Conference on Behavioral, Economic and Socio-culutral Computing (BESC'14)
- ⋆ 2014 The 8th International Conference on Intelligent Information Processing (IIP'14)
- ⋆ 2013 Twenty-Seventh Conference on Artificial Intelligence (AAAI'13)
- ⋆ 2013 Twenty-Third International Joint Conference on Artificial Intelligence (IJCAI'13), Senior PC
- ⋆ 2013 The 16th international conference on Principles and Practice of Multi-Agent Systems (PRIMA'13), Senior PC
- ⋆ 2013 The 7th International Conference on Intelligent Information Processing (IIP'13)
- ⋆ 2012 Twenty-Sixth Conference on Artificial Intelligence (AAAI'12)
- ⋆ 2012 International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'12)
- ⋆ 2011 International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'11)

Workshop Program Committees:

- ⋆ 2023 AAMAS Workshop on Optimization and Learning in Multiagent Systems (OptLearnMAS)
- ⋆ 2022 International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'22, Doctoral Consortium)
- ⋆ 2021 International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'21, Doctoral Consortium)
- ⋆ 2020 The First IJCAI-PRICAI Workshop on AI for Connected Mobility
- ⋆ 2020 AAMAS Workshop on Optimization and Learning in Multiagent Systems (OptLearnMAS)
- ⋆ 2020 International Workshop on Games, Agents and Incentives (GAIW)
- ⋆ 2019 The 12nd International Workshop on Agent-based Complex Automated Negotiations (ACAN)
- ⋆ 2019 2nd Scaling-Up Reinforcement Learning (SURL) Workshop
- ⋆ 2019 International Workshop on Games, Agents and Incentives (GAIW)
- ⋆ 2019 International Workshop on Optimisation in Multi-Agent Systems (OPTMAS)
- ⋆ 2018 AAMAS-IJCAI Joint Workshop on Agents and Incentives in AI
- ⋆ 2018 International Workshop on Optimisation in Multi-Agent Systems (OPTMAS)
- ⋆ 2018 The 11st International Workshop on Agent-based Complex Automated Negotiations (ACAN)
- ⋆ 2018 International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'18, Doctoral Consortium)
- ⋆ 2017 The Twenty-Sixth International Joint Conference on Artificial Intelligence (IJCAI'17, Demo)
- ⋆ 2017 International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'17, Doctoral Consortium)
- ⋆ 2017 The Fourth Workshop on Multiagent Interaction without Prior Coordination (MIPC) @AAMAS'17
- ⋆ 2017 Joint Workshop on Trading Agent Design and Analysis (TADA) and Agent-Mediated Electronic Commerce (AMEC)
- ⋆ 2017 The 10th International Workshop on Agent-based Complex Automated Negotiations (ACAN)
- ⋆ 2017 Workshop on Adversarial Reasoning in Multi-agent Systems (ADVERSE) @AAMAS'17
- ⋆ 2017 The First Workshop on Transfer in Reinforcement Learning (TIRL) @AAMAS'17
- ⋆ 2017 Ninth International Workshop on Optimisation in Multi-Agent Systems (OPTMAS)
- ⋆ 2016 Fifth International Workshop on Human-Agent Interaction Design and Models (HAIDM'16)

- ⋆ 2016 Eighth International Workshop on Optimisation in Multi-Agent Systems (OPTMAS)
- ⋆ 2016 The AAMAS 2016 Workshop on Transportation Applications of Equilibrium, Incentives and Game Theory
- ⋆ 2016 The 9th International Workshop on Agent-based Complex Automated Negotiations (ACAN)
- ⋆ 2016 Security and Multi-agent Systems (SecMAS) at AAMAS'2016
- ⋆ 2016 Joint Workshop on Trading Agent Design and Analysis (TADA) and Agent-Mediated Electronic Commerce (AMEC)
- ⋆ 2016 Twenty-Ninth Conference on Artificial Intelligence (AAAI'16, Doctoral Consortium)
- ⋆ 2015 International Joint Agents Workshop and Symposium (IJAWS2015)
- ⋆ 2015 Fourth International Workshop on Human-Agent Interaction Design and Models (HAIDM'15)
- ⋆ 2015 Joint Workshop on Trading Agent Design and Analysis (TADA) and Agent-Mediated Electronic Commerce (AMEC)
- ⋆ 2015 The Eighth International Workshop on Agent-based Complex Automated Negotiations (ACAN)
- ⋆ 2015 Eighth International Workshop on Optimisation in Multi-Agent Systems (OPTMAS)
- ⋆ 2015 Twenty-Eighth Conference on Artificial Intelligence (AAAI'15, Doctoral Consortium)
- ⋆ 2015 AAAI workshop on Multiagent Interaction without Prior Coordination (MIPC'15)
- ⋆ 2014 International Joint Workshop on Optimisation in Multi-Agent Systems and Distributed Constraint Reasoning (OPTMAS-DCR'14)
- ⋆ 2014 Third International Workshop on Human-Agent Interaction Design and Models (HAIDM'14)
- ⋆ 2014 Joint Workshop on Trading Agent Design and Analysis (TADA) and Agent-Mediated Electronic Commerce (AMEC)
- ⋆ 2013 International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'13, Doctoral Consortium)
- ⋆ 2013 International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'13, Demo Track)
- ⋆ 2013 The 15th International Workshop on Agent-Mediated Electronic Commerce (AMEC)
- ⋆ 2013 Sixth International Workshop on Optimisation in Multi-Agent Systems (OPTMAS)
- ⋆ 2013 Second International Workshop on Human-Agent Interaction Design and Models (HAIDM)
- ⋆ 2013 The Ninth International Workshop on Agents & Data Mining Interaction (ADMI-13)
- ⋆ 2012 Fifth International Workshop on Optimisation in Multi-Agent Systems (OPTMAS)
- ⋆ 2012 Joint Workshop on Trading Agent Design and Analysis (TADA) and Agent-Mediated Electronic Commerce (AMEC)
- ⋆ 2012 First International Workshop on Human-Agent Interaction Design and Models (HAIDM)
- ⋆ 2012 The Eighth International Workshop on Agents & Data Mining Interaction (ADMI-12)
- ⋆ 2011 Workshop on Agent-Mediated Electronic Commerce (AMEC XIII)

Invited Participation in Selected Panels:

- ⋆ 2021 Panelist at the 2021 CMU Symposium on AI and Social Good
- ⋆ 2018 Panelist at the Tenth International Workshop on Optimisation in Multi-Agent Systems (OPTMAS) at AAMAS'18
- ⋆ 2017 Panelist at the Ninth International Workshop on Optimisation in Multi-Agent Systems (OPTMAS) at AAMAS'17
- ⋆ 2015 Panelist at the Doctoral Mentoring Program at the International Joint Conference on Autonomous Agents and Multi-Agent Systems (AAMAS'15)

Award Committee Member:

⋆ 2014 **International Foundation of Autonomous Agents and Multi-Agent Systems (IFAAMAS)** Victor Lesser Distinguished Dissertation Award.

Grant Proposal Reviewing:

⋆ National Natural Science Foundation of China

⋆ United States National Science Foundation

⋆ Israel National Science Foundation

⋆ Czech Science Foundation

Reviewing:

⋆ ACM Transactions on Autonomous and Adaptive Systems (ACM TAAS)

⋆ ACM Transactions on Intelligent Systems and Technology (ACM TIST)

⋆ Algorithmica

⋆ Annals of Mathematics and Artificial Intelligence (AMAI)

⋆ Artificial Intelligence Journal (AIJ)

⋆ Computers & Operations Research

⋆ Games and Economic Behavior (GEB)

⋆ Group Decision and Negotiation

⋆ IEEE Intelligent Systems

⋆ IEEE Transactions on Information Forensics & Security

⋆ IEEE Transactions on Mobile Computing

⋆ IEEE Transactions on Systems, Man and Cybernetics, Part A, Part B, Part C

⋆ Information Systems Frontiers

⋆ Journal of Artificial Intelligence Research (JAIR)

⋆ Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)

⋆ Journal of Computer Science and Technology

⋆ Journal of Machine Learning Research (JMLR)

⋆ Journal of Transport Geography

⋆ Multiagent and Grid Systems

⋆ Multimedia Systems

⋆ Naval Research Logistics

⋆ Networks

⋆ Physica A

⋆ SCIENCE CHINA Information Sciences

⋆ The Computer Journal

⋆ Transportation Science

⋆ World Wide Web Journal

⋆ Many conferences including AAMAS, AAAI, IJCAI, EC, WINE, SAGT

Other Service:

⋆ 2023 Mentor at AAMAS 2023 Doctoral Consortium

⋆ 2019 Mentor at AAMAS 2019 Doctoral Consortium

⋆ 2018 Mentor at AAAI 2018 Doctoral Consortium

- ⋆ 2017 Mentor at IJCAI 2017 Doctoral Consortium
- ⋆ 2017 Mentor at AAMAS 2017 Doctoral Consortium
- ⋆ 2016 Mentor at IJCAI 2016 Doctoral Consortium
- ⋆ 2016 Mentor for the Doctoral Consortium at the 4th International conference on Computational Sustainability
- ⋆ 2015 Mentor at AAAI 2015 Doctoral Consortium
- ⋆ 2014 Mentor at AAAI 2014 Doctoral Consortium
- ⋆ 2014 Mentor at AAMAS 2014 Doctoral Consortium

Students Supervised

Doctoral Students:

- ⋆ Jianing Ju (Spring 2025-), Nanyang Technological University
- ⋆ Shengming Wang (Spring 2025-), Nanyang Technological University
- ⋆ Fuxiang Zhang (Spring 2025-), Nanyang Technological University
- ⋆ Jiacheng Xu (Spring 2025-), Nanyang Technological University
- ⋆ Qi Wei (Fall 2024-), Nanyang Technological University
- ⋆ Penghui Yang (Fall 2024-), Nanyang Technological University
- ⋆ Weihao Tan (Spring 2024-), Nanyang Technological University
- ⋆ Xinyu Cai (Fall 2023-), Nanyang Technological University
- ⋆ Yuzhou Cao (Fall 2023-), Nanyang Technological University
- ⋆ Molei Qin (Fall 2023-), Nanyang Technological University
- ⋆ Sheng Zang (Fall 2022-), Nanyang Technological University
- ⋆ Longtao Zheng (Fall 2022-), Nanyang Technological University
- ⋆ Zhenghai Xue (Fall 2022-), Nanyang Technological University
- ⋆ Chuqiao Zong (Fall 2022-), Nanyang Technological University
- ⋆ Haochong Xia (Fall 2022-), Nanyang Technological University
- ⋆ Pengjie Gu (Fall 2022-), Nanyang Technological University
- ⋆ Yewen Li (Spring 2022-), Nanyang Technological University

Alumni:

- ⋆ Renchunzi Xie (Fall 2021-Spring 2025), Nanyang Technological University. Now Postdoc at Nanyang Technological University.
- ⋆ Shuxin Li (Spring 2021-Spring 2025), Nanyang Technological University. Now Postdoc at Nanyang Technological University.
- ⋆ Shuo Sun (Fall 2021-Winter 2024), Nanyang Technological University. Now Quantitative Researcher at Pulsar.
- ⋆ Yanchen Deng (Fall 2020-Winter 2023), Nanyang Technological University. Now Postdoc at Nanyang Technological University.
- ⋆ Wanqi Xue (Fall 2019-Winter 2023), Nanyang Technological University. Now Research Scientist at Noah's Ark Lab.
- ⋆ Wei Qiu (Fall 2019-Winter 2023), Nanyang Technological University. Now Research Scientist at Tencent.
- ⋆ Rundong Wang (Fall 2019-Summer 2023), Nanyang Technological University. Now Research Scientist at Tencent.

- ⋆ Jakub Cerny (Spring 2019-Summer 2023), Nanyang Technological University. Now Postdoc at Columbia University.
- ⋆ Hongxin Wei (Spring 2020-Summer 2023), Nanyang Technological University. Now Assistant Professor at Southern University of Science and Technology (SUSTech).
- ⋆ Aye Phyu Phyu Aung (Spring 2019-Winter 2022), Nanyang Technological University. Now Research Scientist at A*STAR.
- ⋆ Shufeng Kong (Fall 2020-Summer 2022), Postdoc, Nanyang Technological University. Now Associate Professor at Sun Yat-sen University.
- ⋆ Xu He (Fall 2017-Summer 2021), PhD student at Nanyang Technological University. Now Research Scientist at Noah's Ark Lab.
- ⋆ Lei Feng (Fall 2017-Winter 2020), PhD student at Nanyang Technological University. Now Visiting Professor at NTU.
- ⋆ Youzhi Zhang (Fall 2016-Summer 2020),PhD student at Nanyang Technological University. Now Assistant Professor of CAIR, HKISI-CAS.
- ⋆ Xinrun Wang (Fall 2015-Spring 2020), PhD student at Nanyang Technological University. Now Postdoc at Nanyang Technological University.
- ⋆ Jiuchuan Jiang (Spring 2016-Summer 2019), PhD student at Nanyang Technological University. Now Assistant Professor at Nanjing University of Finance and Economics.
- ⋆ Jiang Rong (Fall 2013-Fall 2018), PhD student at Institute of Computing Technology, Chinese Academy of Sciences. Now Alibaba.
- ⋆ Mengchen Zhao (Fall 2014-Fall 2018), PhD student at Nanyang Technological University. Now Research Scientist at Noah's Ark Lab.
- ⋆ Qingyu Guo (Spring 2014-Summer 2018), PhD student at Nanyang Technological University. Now Pinduoduo.
- ⋆ Yanhai Xiong (Spring 2014-Summer 2018), PhD student at Nanyang Technological University. Now Assistant Professor of data science at William & Mary.
- ⋆ Haipeng Chen (Spring 2014-Summer 2018), PhD student at Nanyang Technological University. Now Assistant Professor of data science at William & Mary.
- ⋆ Wanyuan Wang (Fall 2016-Fall 2017), Postdoc, Nanyang Technological University. Now Associate Professor at Southeast University.
- ⋆ Yue Yin (Fall 2012-Winter 2016), PhD student at Institute of Computing Technology, Chinese Academy of Sciences. Now Microsoft.
- ⋆ Zhen Wang (Fall 2014-Summer 2016), Research Associate, Nanyang Technological University. Now Associate Professor at Hangdian University.
- ⋆ Jiarui Gan (Fall 2012-Summer 2015), Master student at Institute of Computing Technology, Chinese Academy of Sciences; Fall 2015-Summer 2016, Research Associate, Nanyang Technological University. Now Lecturer at University of Oxford.

Teaching Experience

- ⋆ 2023 Fall: Artificial Intelligence, Nanyang Technological University
- ⋆ 2023 Spring: Intelligent Agents, Nanyang Technological University
- ⋆ 2022 Fall: Artificial Intelligence, Nanyang Technological University
- ⋆ 2022 Spring: Intelligent Agents, Nanyang Technological University
- ⋆ 2022 Spring: Introduction of Data Science and Artificial Intelligence, Nanyang Technological University
- ⋆ 2021 Fall: Artificial Intelligence, Nanyang Technological University
- ⋆ 2021 Spring: Intelligent Agents, Nanyang Technological University

⋆ 2021 Spring: Introduction of Data Science and Artificial Intelligence, Nanyang Technological University
⋆ 2020 Fall: Artificial Intelligence, Nanyang Technological University
⋆ 2020 Spring: Intelligent Agents, Nanyang Technological University
⋆ 2020 Spring: Introduction of Data Science and Artificial Intelligence, Nanyang Technological University
⋆ 2019 Fall: Artificial Intelligence, Nanyang Technological University
⋆ 2019 Fall: Introduction of Data Science and Artificial Intelligence, Nanyang Technological University
⋆ 2019 Spring: Intelligent Agents, Nanyang Technological University
⋆ 2018 Fall: Artificial Intelligence, Nanyang Technological University
⋆ 2018 Spring: Intelligent Agents, Nanyang Technological University
⋆ 2017 Fall: Artificial Intelligence, Nanyang Technological University
⋆ 2017 Spring: Intelligent Agents, Nanyang Technological University
⋆ 2016 Fall: Artificial Intelligence, Nanyang Technological University
⋆ 2016 Spring: Intelligent Agents, Nanyang Technological University
⋆ 2015 Fall: Artificial Intelligence, Nanyang Technological University
⋆ 2015 Spring: Intelligent Agents, Nanyang Technological University
⋆ 2014 Fall: Artificial Intelligence, Nanyang Technological University
⋆ 2014 Spring: Intelligent Agents, Nanyang Technological University
⋆ 2013 Fall: Software Engineering, Nanyang Technological University
⋆ 2013 Spring: Algorithms, Nanyang Technological University