Haifeng Xu

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RESEARCH INTERESTS

Computational Economics, Machine Learning, Artificial Intelligence, Multi-Agent Systems, the Design and Analysis of Algorithms

PROFESSIONAL EXPERIENCE

Assistant Professor 07/2022 – present
Department of Computer Science
University of Chicago, USA

Alan Batson Assistant Professor 08/2019 – 06/2022
Department of Computer Science
University of Virginia, USA

Visiting Research Scientist (one day per week) 08/2021 – 02/2022
Market Algorithm Research Group, Google, USA

Postdoctoral Fellow 08/2018 – 08/2019
Center for Research on Computation and Society (CRCS), Harvard University, USA
Hosts: Yiling Chen and David C. Parkes

Lecturer in Computer Science, Harvard University 09/2018 – 12/2018

Research Intern, Google Research 06/2016 – 08/2016

Visiting Scholar, Simons Institute for the Theory of Computing 10/2015 – 12/2015
Program: Economics and Computation

Research Intern, Yahoo! Lab 06/2015 – 08/2015

Research Intern, Microsoft Research 07/2011 – 06/2012

EDUCATION

Ph.D. in Computer Science 08/2013 – 07/2018
University of Southern California, USA
Advisors: Milind Tambe and Shaddin Dughmi
Thesis: Information as a Double-Edged Sword in Strategic Interactions.
ACM SIGecom Doctoral Dissertation Award (honorable mention)
IFAAMAS Victor Lesser Distinguished Dissertation Award (runner-up)

MMath in Computational Mathematics 08/2012 – 08/2013
University of Waterloo, Canada

B.Sc. (honours) in Mathematics 08/2008 – 07/2012
School of Gifted Young, University of Science & Technology of China
I was a member of the HUA Loo-Keng Elite Program in Mathematics

HONORS & AWARDS

- Google Faculty Research Award 2020
  One of the six recipients in *Algorithms and Optimization* within North America
- ACM SIGecom Dissertation Award (honorable mention) 2019
- IFAAMAS Victor Lesser Distinguished Dissertation Award (runner-up) 2019
- Best Application System Demo Award, AAMAS 2019. 2019
- Google Ph.D. Fellowship 2017
  One of the three recipients worldwide in the category *Algorithms, Optimization and Markets*
- CAMS Prize for Excellence in Research, USC Center for Applied Mathematical Sciences 2017
  Awarded annually to two graduate students across USC
- Best Paper Award, AAMAS Workshop on Security and Multi-agent Systems (SecMas) 2016
- Best Student Paper Award, AAMAS 2016 2016
- Shing-Tung Yau Chinese College Student Mathematics Contests 2011
  A prestigious national contest organized by the famous mathematician Shing-Tung Yau
  - Silver Medal in Applied Mathematics (Top 4 in the country)
  - Bronze Team Medal (Top 4 teams in the country)

PUBLICATIONS

*α-β indicates alphabetical author order, which is typical for theoretical CS venues

Papers Under Review

[U2]. (α-β) Ravi Sundaram, Anil Vullikanti, **Haifeng Xu** and Fan Yao. PAC-Learning for Strategic Classification. *in submission to* ***Journal of Machine Learning Research***.

[U1]. You Zu, Krishnamurthy Iyer and **Haifeng Xu**. Learning to Persuade on the Fly: Robustness Against Ignorance. *in submission to* ***Operations Research***.

Journal Papers

[J4]. (α-β) Yakov Babichenko, Inbal Talgam-Cohen, **Haifeng Xu** and Konstantin Zabarnyi. Regret-Minimizing Bayesian Persuasion. ***Games and Economic Behavior*** (minor revision).

[J3]. **Haifeng Xu**, Rasha Kashef, Hans De Sterck and Geoffrey Sanders. Efficient Algebraic Multigrid Methods for Multilevel Overlapping Co-Clustering of User-Item Relationships. ***INFORMS Journal on Computing***, *accepted*.

[J2]. (α-β) Shaddin Dughmi, **Haifeng Xu.** Algorithmic Bayesian Persuasion. ***SIAM Journal on Computing***, *page STOC16-68, 2019.*

[J1]. Amulya Yadav, Hau Chan, Albert Jiang, **Haifeng Xu**, Eric Rice and Milind Tambe. Using Social Networks to Raise HIV Awareness Among Homeless Youth. ***IBM Journal of Research and Development****: Volume 61, Issue 6(4), pp. 1-10, 2017.*

Refereed Conference Papers

[C56]. (α-β) Jibang Wu, Fan Yao and **Haifeng Xu**. Multi-Agent Learning for Iterative Dominance Elimination: Formal Barriers and New Algorithms. *Proceedings of the 35th Annual Conference on Learning Theory*, (**COLT 2022**).

[C55]. Jibang Wu, Zixuan Zhang, Zhe Feng, Zhaoran Wang, Zhuoran Yang, Michael I. Jordan and **Haifeng Xu**. Sequential Information Design: Markov Persuasion Process and Its Efficient Reinforcement Learning. *Proceedings of the 23th ACM Conference on Economics and Computation*, (**EC 2022**).

[C54]. Chenghan Zhou, Thanh H. Nguyen and **Haifeng Xu**. Algorithmic Information Design in Multi-Player Games: Possibility and Limits in Singleton Congestion. *Proceedings of the 23th ACM Conference on Economics and Computation*, (**EC 2022**).

[C53]. (α-β) Yiding Feng, Wei Tang and **Haifeng Xu**. Online Bayesian Recommendation with No Regret. *Proceedings of the 23th ACM Conference on Economics and Computation*, (**EC 2022**).

[C52]. Fan Yao, Chuanhao Li, Denis Nekipelov, Hongning Wang and **Haifeng Xu**. Learning from a Learning User for Optimal Recommendations. *Proceedings of the 39th International Conference on Machine Learning*, (**ICML 2022**).

[C51]. (α-β) Junjie Chen, Minming Li and **Haifeng Xu**. Selling Data To a Machine Learner: Pricing via Costly Signaling. *Proceedings of the 39th International Conference on Machine Learning*, (**ICML 2022**).

[C50]. Huazheng Wang, **Haifeng Xu** and Hongning Wang. When Are Linear Stochastic Bandits Attackable? *Proceedings of the 39th International Conference on Machine Learning*, (**ICML 2022**).

[C49]. Chenghan Zhou, Andrew Spivey, **Haifeng Xu** and Thanh Hong Nguyen. Information Design for Multiple Independent and Self-Interested Defenders: Work Less, Pay Off More. *Proceedings of the 38th Conference on Uncertainty in Artificial Intelligence*, (**UAI 2022**).

[C48]. (α-β for first two authors) Anshuka Rangi, **Haifeng Xu**, Long Tran-Thanh and Massimo Franceschetti. Understanding the Limits of Poisoning Attacks in Episodic Reinforcement Learning. *Proceedings of the 31st International Joint Conference on Artificial Intelligence* (**IJCAI 2022**), long oral, 3.75%

[C47]. (α-β) Quinlan Dawkins, Minbiao Han and **Haifeng Xu**. First-order Convex Fitting and Its Application to Economics and Optimization. *Proceedings of the 36nd AAAI Conference on Artificial Intelligence* (**AAAI 2022**, acceptance rate 15%), long oral

[C46]. Fan Yao, Chuanhao Li, Denis Nekipelov, Hongning Wang and **Haifeng Xu**. Learning the Optimal Recommendation from Explorative Users. *Proceedings of the 36nd AAAI Conference on Artificial Intelligence* (**AAAI 2022**, acceptance rate 15%)

[C45]. **Haifeng Xu** and Ruggiero Cavallo. The Strange Role of Information Asymmetry in Auctions — Does More Accurate Value Estimation Benefit A Bidder? *Proceedings of the 36nd AAAI Conference on Artificial Intelligence* (**AAAI 2022**, acceptance rate 15%), long oral

[C44]. (α-β) Anshuka Rangi, Long Tran-Thanh, **Haifeng Xu** and Massimo Franceschetti. Saving Stochastic Bandits from Poisoning Attacks via Limited Data Verification. *Proceedings of the 36nd AAAI Conference on Artificial Intelligence* (**AAAI 2022**, acceptance rate 15%), long oral

[C43]. Thanh Nguyen and **Haifeng Xu**. When Can the Defender Effectively Deceive Attackers in Security Games? *Proceedings of the 36nd AAAI Conference on Artificial Intelligence* (**AAAI 2022**, acceptance rate 15%).

[C42]. (α-β) Yakov Babichenko, Inbal Talgam-Cohen, **Haifeng Xu** and Konstantin Zabarnyi. Multi-Channel Bayesian Persuasion. *Proceedings of the Innovations in Theoretical Computer Science* (**ITCS'22**).

[C41]. (α-β) Quinlan Dawkins, Minbiao Han and **Haifeng Xu**. The Limits of Optimal Pricing in the Dark. *Proceedings of the34th Conference on Neural Information Processing Systems* (**NeurIPS'21**).

[C40]. Sijun Tan, Jibang Wu, Xiaohui Bei and **Haifeng Xu**. Least Square Calibration for Peer Reviews. *Proceedings of the34th Conference on Neural Information Processing Systems* (**NeurIPS'21**).

[C39]. Chengshuai Shi, **Haifeng Xu**, Wei Xiong, Cong Shen. (Almost) Free Incentivized Exploration from Decentralized Learning Agents. *Proceedings of the34th Conference on Neural Information Processing Systems* (**NeurIPS'21**).

[C38]. (α-β) Ravi Sundaram, Anil Vullikanti, **Haifeng Xu** and Fan Yao. PAC-Learning for Strategic Classification. *Proceedings of the 38th International Conference on Machine Learning* (**ICML 2021**), long oral, 3%.

[C37]. Quinlan Dawkins, Tianxi Li and **Haifeng Xu**. Diffusion Source Identification on Networks with Statistical Confidence. *Proceedings of the 38th International Conference on Machine Learning* (**ICML 2021**).

[C36]. Shuze Liu, Weiran Shen and **Haifeng Xu**. Optimal Pricing of Information. *Proceedings of the 22th ACM Conference on Economics and Computation* (**EC'21**).

[C35]. (α-β) Yakov Babichenko, Inbal Talgam-Cohen, **Haifeng Xu** and Konstantin Zabarnyi. Regret-Minimizing Bayesian Persuasion. *Proceedings of the 22th ACM Conference on Economics and Computation* (**EC'21**).

[C34]. You Zu, Krishnamurthy Iyer and **Haifeng Xu**. Learning to Persuade on the Fly: Robustness Against Ignorance. *Proceedings of the 22th ACM Conference on Economics and Computation* (**EC'21**).

[C33]. James Nachbar and Haifeng Xu. The Power of Signaling and its Intrinsic Connection to the Price of Anarchy. *Proceedings of the Third International Conference on Distributed Artificial Intelligence*, (**DAI'21**).

[C32]. Aditya Mate, Jackson A. Killian, **Haifeng Xu**, Andrew Perrault, Milind Tambe. Collapsing Bandits and Their Application to Public Health Interventions. *Proceedings of the 34th Conference on Neural Information Processing Systems* (**NeurIPS 2020**).

[C31]. (α-β) Zhe Feng, David Parkes, **Haifeng Xu**. The Intrinsic Robustness of Stochastic Bandits to Strategic Manipulation. *Proceedings of the 37th International Conference on Machine Learning* (**ICML 2020**).

[C30]. **Haifeng Xu**. On the Tractability of Public Persuasion with No Externalities. *Proceedings of the 31st ACM-SIAM Symposium on Discrete Algorithms* (**SODA 2020**).

[C29]. (α-β) Yiling Chen, **Haifeng Xu**, Shuran Zheng. Selling Information through Consulting. *Proceedings of the 31st ACM-SIAM Symposium on Discrete Algorithms* (**SODA 2020**).

[C28]. Sarah Keren, **Haifeng Xu**, David Parkes, Kofi Kwapong and Barbara Grosz. Information Shaping for Enhanced Goal Recognition of Partially-Informed Agents. *Proceedings of the 34nd AAAI Conference on Artificial Intelligence* (**AAAI 2020**), oral.

[C27]. Elizabeth Bondi, Hoon Oh, **Haifeng Xu**, Fei Fang, Bistra Dilkina, Milind Tambe. To Signal or Not To Signal: Exploiting Uncertain Real-Time Information in Signaling Games for Security and Sustainability. *Proceedings of the 34nd AAAI Conference on Artificial Intelligence* (**AAAI 2020**), oral.

[C26]. Chao Yan, **Haifeng Xu**, Yevgeniy Vorobeychik, Bo Li, Daniel Fabbri, Bradley Malin. To Warn or Not to Warn: Online Signaling in Audit Games. *Proceedings of the 36th IEEE International Conference on Data Engineering* (**ICDE 2020**), oral.

[C25]. Thanh Nguyen, Andrew Butler and **Haifeng Xu**. Tackling Imitative Attacker Deception in Repeated Bayesian Stackelberg Security Games. *Proceedings of the 24th European Conference on Artificial Intelligence* (**ECAI 2020**).

[C24]. Jiarui Gan, **Haifeng Xu**, Qingyu Guo, Long Tran-Thanh, Zinovi Rabinovich and Michael Wooldridge. Imitative Follower Deception in Stackelberg Games. *Proceedings of the 20th ACM Conference on Economics and Computation* (**EC'19**).

[C23]. (α-β) Thanh H. Nguyen and **Haifeng Xu**. Imitative Attacker Deception in Stackelberg Security Games. *Proceedings of the 28th International Joint Conference on Artificial Intelligence* (**IJCAI'19**).

[C22]. (α-β) Jerry Anunrojwong, Yiling Chen, Bo Waggoner and **Haifeng Xu**. Computing Equilibria of Prediction Markets via Persuasion. *Proceedings of the 15th Conference on Web and Internet Economics* (**WINE'19**).

[C21]. Omkar Thakoor, Milind Tambe, Phebe Vayanos, **Haifeng Xu**, Christopher Kiekintveld, and Fei Fang. Cyber Camouflage Games for Strategic Deception. *Proc. 10th Conference on Decision and Game Theory for Security* (**GameSec 2019**).

[C20]. **Haifeng Xu**, Kai Wang, Phebe Vayanos, Milind Tambe. Strategic Coordination of Human Patrollers and Mobile Sensors with Signaling for Security Games. *Proceedings of the 32th AAAI Conference on Artificial Intelligence* (**AAAI'18**), oral.

[C19]. (α-β) Ashwinkumar Badanidiyuru, Kshipra Bhawalkar, **Haifeng Xu**. Targeting and Signaling in Ad Auctions. *ACM-SIAM Symposium on Discrete Algorithms* (**SODA'18**).

[C18]. **Haifeng Xu**, Shaddin Dughmi, Milind Tambe, Venil Loyd Noronha. Mitigating the Curse of Correlation in Security Games by Entropy Maximization. *Proceedings of the 17th International Conference on Autonomous Agents and Multiagent Systems* (**AAMAS'18**, short paper).

[C17]. Aaron Schlenker, Omkar Thakoor, **Haifeng Xu**, Fei Fang, Milind Tambe, Long Tran-Thanh, Phebe Vayanos, Yevgeniy Vorobeychik. Deceiving Cyber Adversaries: A Game Theoretic Approach. *Proceedings of the 17th International Conference on Autonomous Agents and Multiagent Systems* (**AAMAS'18**).

[C16]. (α-β) Shaddin Dughmi, **Haifeng Xu**. Algorithmic Persuasion with No Externalities. *Proceedings of the 18th ACM Conference on Economics and Computation* (**EC'17**).

[C15]. **Haifeng Xu***, Benjamin Ford*, Fei Fang, Bistra Dilkina, Andrew Plumptre, Milind Tambe, Margaret Driciru, Fred Wanyama, Aggrey Rwetsiba, Mustapha Nsubaga and Joshua Mabonga. Optimal Patrol Planning for Green Security Games with Black-Box Attackers. *Proceedings of the 8th Conference on Decision and Game Theory for Security* (**GameSec'17**). (*Equal Contributions)

[C14]. Aaron Schlenker, **Haifeng Xu**, Mina Guirguis, Christopher Kiekintveld, Arunesh Sinha, Milind Tambe, Solomon Sonya, Darryl Balderas, Noah Dunstatter. Don't Bury your Head in Warnings: A Game-Theoretic Approach for Intelligent Allocation of Cyber-security Alerts. *Proceedings of the 26th International Joint Conference on Artificial Intelligence* (**IJCAI'17**). Highlighted in the press release opening the IJCAI'17 conference.

[C13]. (α-β) Shaddin Dughmi, **Haifeng Xu.** Algorithmic Bayesian Persuasion. *Proceedings of the 48th ACM Symposium on Theory of Computing* (**STOC'16**). Invited to SICOMP Special Issue for STOC 2016.

[C12]. **Haifeng Xu.** The Mysteries of Security Games: Equilibrium Computation Becomes Combinatorial Algorithm Design. *Proceedings of the 17th ACM Conference on Economics and Computation* (**EC'16**). Best paper award at the AAMAS-16 workshop on Security and Multi-agent Systems.

[C11]. **Haifeng Xu**, Rupert Freeman, Vincent Conitzer, Shaddin Dughmi, Milind Tambe. Signaling in Bayesian Stackelberg Games. *Proceedings of the 15th International Conference on Autonomous Agents and Multiagent Systems* (**AAMAS'16**).

[C10]. **Haifeng Xu***, Long Tran Thanh*, Nick Jennings. Playing Repeated Security Games with No Prior Knowledge. *Proceedings of the 15th International Conference on Autonomous Agents and Multiagent Systems* (**AAMAS'16**). (*Equal Contributions)

[C9]. Amulya Yadav, Hau Chan, Albert Jiang, **Haifeng Xu**, Eric Rice, Milind Tambe. Using Social Networks to Aid Homeless Shelters: Dynamic Influence Maximization Under Uncertainty. *Proceedings of the 15th International Conference on Autonomous Agents and Multiagent Systems* (**AAMAS'16**). Best student paper award.

[C8]. **Haifeng Xu**, Albert X. Jiang, Arunesh, Sinha, Zinovi Rabinovich, Shaddin Dughmi, Milind Tambe. Security Games with Information Leakage: Modeling and Computation. *Proceedings of the 24th International Joint Conference on Artificial Intelligence* (**IJCAI'15**).

[C7]. Yue Yin, **Haifeng Xu**, Jiarui Gan, Bo An, Albert X. Jiang. Computing Optimal Mixed Strategies for Security Games With Dynamic Payoffs. *Proceedings of the 24th International Joint Conference on Artificial Intelligence* (**IJCAI'15**).

[C6]. Zinovi Rabinovich, Albert X. Jiang, Manish Jain, **Haifeng Xu**. Information Disclosure as a Means of Security. *Proceedings of the 14th International Conference on Autonomous Agents and Multiagent Systems* (**AAMAS'15**).

[C5]. **Haifeng Xu**, Zinovi Rabinovich, Shaddin Dughmi, Milind Tambe. Exploring Information Asymmetry in Two-Stage Security Games. *Proceedings of the 29th AAAI Conference on Artificial Intelligence* (**AAAI'15**).

[C4]. **Haifeng Xu**, Fei Fang, Albert X. Jiang, Vincent Conitzer, Shaddin Dughmi, Milind Tambe. Solving Zero-Sum Security Games in Discretized Spatio-Temporal Domains. *Proceedings of the 28th AAAI Conference on Artificial Intelligence* (**AAAI'14**).

[C3]. Leandro Marcolino, **Haifeng Xu**, Albert X. Jiang, Milind Tambe, Emma Bowring. Give a Hard Problem to a Diverse Team: Exploring Large Action Spaces. *Proceedings of the 28th AAAI Conference on Artificial Intelligence* (**AAAI'14**).

[C2]. **Haifeng Xu**, Kate Larson. Improving the Efficiency of Crowdsourcing Contests. *Proceedings of the 13th International Conference on Autonomous Agents and Multiagent Systems* (**AAMAS'14**).

[C1]. **Haifeng Xu**, Bin Gao, Diyi Yang, Tieyan Liu. Predicting Advertiser Bidding Behaviors in Sponsored Search by Rationality Modeling. *Proceedings of the 22nd International Conference on World Wide Web* (**WWW'13**).

ADVISING & MENTORING

PhD Students

Student	Year	Description
Minbiao Han	2019 -	Passed qualification exam
Jibang Wu	2019 -	Passed qualification exam
Fan Yao	2020 -	Passed qualification exam, co-advised with Hongning Wang
Yang Yu	2021 -	From UVA Econ department,
Shuze Liu	2020 - 2022	

Undergrads and Masters

Student	Year	Next Stop	Description
Harry Li	2022 -		UVA SEAS undergrad research fellowship
Emily Feng	2021 -		
Chenghan Zhou	2020 - 2022	Princeton	Leading-author papers at EC'22 and UAI'22; honorable mention for 2020 CRA Outstanding Undergrad Researcher award

Quinlan Dawkins	2020 - 2022	nod.ai	Leading-author papers at ICML'21, NeurIPS'21 and AAAI'22
Nijat Khanbabayev	2021 - 2022		
Sijun Tan	2020 - 2021	Facebook	Leading-author paper at NeurIPS'21

Visitors

Student	Year	From	Description
James Nachbar	2020 summer	Yale	First-author paper at DAI'21
Zhifan Lu	2020 summer	UVA Mcintire	

TEACHING

Lecturer

- UVA CS 4501: Introduction to Algorithmic Economics (undergraduate) Spring'22
- UVA CS 4710: Artificial Intelligence (undergraduate) Fall'21
  Enrollment: 56; Student Evaluation: 4.29/5.0; Response Rate: 87.5 %
- UVA CS 6501: Topics in Learning and Game Theory (graduate) Spring'21
  Enrollment: 31; Student Evaluation: 4.31/5.0; Response Rate: 83.87 %
- UVA CS 6161: Design and Analysis of Algorithms (graduate) Fall'20
  Enrollment: 67; Student Evaluation: 4.14/5.0; Response Rate: 56.72 %
- UVA CS 4710: Artificial Intelligence (undergraduate) Spring'20
  Enrollment: 98; Student Evaluation: 4.18/5.0; Response Rate: 79.59 %
- UVA CS 6501: Topics in Learning and Game Theory (graduate) Fall'19
  Enrollment: 28; Student Evaluation: 4.88/5.0; Response Rate: 75%
- Harvard CS 182: Artificial Intelligence (undergraduate) Fall'18

PROFESSIONAL SERVICE

Tutorials

- Algorithmic Bayesian Persuasion (invited), the 17th Conference on Web and Internet Economics (WINE), Dec 2021.
- A Primer on the Interplay of Game Theory and Machine Learning, Summer School on Game Theory and Social Choice, CityU Hongkong, July 2021.
- Tutorial on Information, Persuasion and Decision Making at EC 2018.

Guest Editor

- 2022, Games journal, the Special Issue on *Machine Learning and Game Theory*.

Chairperson

- TPC co-chair, 13th Conference on Decision and Game Theory for Security (GameSec 2022)
- Workshop on Learning with Strategic Agents (LSA), with AAMAS 2022.
- Workshop on Strategic Reasoning for Societal Challenges (SRSC) with AAMAS 2019.
- Workshop on AI for Imperfect Information Games with AAAI 2018.
- Workshop on Adversarial Reasoning in Multi-Agent Systems with AAMAS 2017.

Senior Program Committee: AAAI (2022, 2021, 2020,2019), IJCAI (2021)

Program Committee: EC(2022, 2021, 2020, 2019), ICML (2022), NeurIPS (2022, 2021), ICLR (2022), ALT (2022), AAAI (2019, 2018), IJCAI (2020, 2019, 2017, 2016, 2015), WINE (2021), AAMAS (2021, 2020, 2019), GameSec (2019, 2018, 2017)

Journal Reviewing Activities: American Economic Review, Management Science, Mathematics of Operation Research, Games and Economic Behavior (GEB), Artificial Intelligence (AIJ), Journal of Artificial Intelligence Research (JAIR), Autonomous Agents and Multi-Agent Systems (JAAMAS), etc.

(SELECTED) INVITED TALKS

[23]. *Optimal Pricing of Information*, invited talk at the Workshop on Data Value at UChicago, June 2022

[22]. *Algorithmic Information Design*, invited tutorial at the 17th Conference on Web and Internet Economics (WINE), Dec 2021

[21]. *Algorithmic Information Design: Computability, Learnability and Applicability to Societal Challenges*, the Center for Research on Computation and Society at Harvard, Nov 2021

[20]. *Algorithmic Information Design: Computability, Robustness and Learnability*, RPI Computer Science Colloquia & Seminars, Nov 2021

[19]. *Manipulating Learning Algorithms in Strategic Environments*, invited talk at Shanghai Finance and Economics University, August 2021

[18]. *Optimal Pricing of Information*, the Workshop on Strategic Communication and Learning, Stony Brook Center for Game Theory, July, 2021

[17]. *The Double-Edged Role of Information in Security Games*, Penn State University AI for Social Impact seminar series, Nov 2020

[16]. *The Double-Edged Role of Information in Security Games*, invited guest lecture at CMU for advanced course *AI Methods for Social Good*, Spring 2020

[15]. *Manipulating Learning Algorithms in Strategic Environments*, CMU Special Institute for Software Research Seminar, Feb 2020

[14]. *Manipulating Learning Algorithms in Strategic Environments*, UVA Bio-complexity Institute Seminar, Nov 2019

[13]. *Manipulating Learning Algorithms in Strategic Environments*, UVA Seminar on Artificial Intelligence and Machine Learning, Nov 2019

[12]. *Manipulating Learning Algorithms in Strategic Environments*, UVA Seminar on Human and Machine Intelligence, Oct 2019

[11]. *Algorithmic Persuasion with No Externalities*, Workshop on the Economics of Strategic Communication and Persuasion, Montreal, Nov 2018.

[10]. *Algorithmic Persuasion*, Harvard EconCS Seminar, Nov 2018.

[9]. *Information as A Double-Edged Sword in Strategic Interactions*, The Institute for Interdisciplinary Information Sciences (IIIS), Tsinghua University, June 2018.

[8]. *Strategic Coordination of Human Patrollers and UAVs with Signaling for Security Games*, Computational Sustainability Open Graduate Online Seminar, May 2018.

[7]. *The Mysteries of Security Games: Equilibrium Computation Becomes Combinatorial Algorithm Design*, Southern California Symposium on Network Economics and Game Theory (NEGT), Caltech, Jan 2018.

[6]. *Strategic Coordination of Human Patrollers and Mobile Sensors with Signaling for Security Games*, CMU CyLab, October 2017.