

Zheyuan Ryan Shi

CONTACT	5000 Forbes Ave Pittsburgh, PA 15213, USA	ryanshi@cmu.edu www.zheyuan.me
EDUCATION	School of Computer Science, Carnegie Mellon University, USA Ph.D. Student, Societal Computing. Advisor: Fei Fang	Aug 2018 - Present
	Swarthmore College, USA B.A. Mathematics and Computer Science with Honors, 4.00/4.00	Aug 2014 - May 2018
	Massachusetts Institute of Technology, USA Visiting Student, EECS, 5.00/5.00	Aug 2016 - May 2017
RESEARCH INTERESTS	Computational game theory, machine learning, optimization, security, computational sustainability	
PUBLICATIONS	Yufei Wang, Zheyuan Ryan Shi , Lantao Yu, Yi Wu, Rohit Singh, Lucas Joppa, and Fei Fang. Deep Reinforcement Learning for Green Security Games with Real-Time Information. To appear in Proceedings of the Thirty-Third AAAI Conference on Artificial Intelligence (AAAI-19).	
	Zheyuan Ryan Shi , Ziye Tang, Long Tran-Thanh, Rohit Singh, and Fei Fang. Designing the Game to Play: Optimizing Payoff Structure in Security Games. In Proceedings of the 27th International Joint Conference on Artificial Intelligence and the 23rd European Conference on Artificial Intelligence (IJCAI-ECAI-18).	
	Zheyuan Shi and Fei Fang. Optimizing Peer Teaching to Enhance Team Performance. In Autonomous Agents and Multiagent Systems: AAMAS'17 Workshops Best Papers, Volume 10642 of Lecture Notes in Artificial Intelligence, Springer, 2017. Winner of Best Paper at TEAMAS-17.	
	Zheyuan Shi and Sindhu Kutty. Strategic Reporting in Exponential Family Prediction Markets. In Proceedings of the 2016 MIT IEEE Undergraduate Research Technology Conference (IEEE URTC 2016).	
RESEARCH EXPERIENCE	School of Computer Science, Carnegie Mellon University	Sept 2017 - Present
	Learning in games in cybersecurity and sustainability domains. Formulated and analyzed two-layer optimization in Stackelberg security games. Applied deep reinforcement learning to solve security games with online information. <i>Supervisor: Fei Fang</i>	
	Department of Mathematics, Swarthmore College	Sept 2017 - May 2018
	Proposed homological symmetry and analyzed its use in topological data analysis. Experimented with planar curves and handwritten digits. <i>Supervisor: Noah Giansiracusa</i>	
	CRCS, Harvard University	Sept 2016 - May 2017
	Formulated the peer teaching problem and devised algorithms to boost team performance. Published and chosen as Best Paper in TEAMAS'17. Designed and experimented with doodle polling mechanisms. <i>Supervisor: Fei Fang</i>	
	Human Dynamics Group, Media Lab, MIT	Sept 2016 - May 2017

Studied network structure in evolution strategies for deep reinforcement learning. Investigated influence patterns in SciCast prediction markets. Built DRL testing module on Amazon EC2, and Python package for the Influence Model.

Supervisor: Dhaval Adjodah

Department of Computer Science, Swarthmore College

Jan 2016 - Aug 2016

Investigated incentive compatibility in exponential family prediction markets. Published at IEEE URTC'16. Designed and analyzed cryptogenography protocols.

Supervisors: Sindhu Kutty, Joshua Brody

HONORS AND AWARDS	Upsilon Pi Epsilon Honor Society Scholarship, IEEE Computer Society, 2018 Nomination to Phi Beta Kappa, 2018 Best Paper Award, First International Workshop on Teams in Multiagent Systems (TEAMAS), 2017 Honorable Mention, CRA Outstanding Undergraduate Researcher Award, 2017 Conference travel grants: RecSys'16, IJCAI-ECAI'18
SELECTED COURSEWORK	CMU: Advanced Intro to Machine Learning (10-715), Truth, Justice, and Algorithm (15-896) MIT: Intro to Mathematical Programming (6.251), Algorithmic Game Theory and Data Science (6.853), Network Science and Models (6.268), Advanced Stochastic Processes (6.265), Algorithms for Inference (6.438), Shape Analysis (6.838) Swarthmore: Computer Networks (CS43), Parallel and Distributed Systems (CS87)
SELECTED COURSE PROJECTS	Auction design with risk-averse bidders in prospect theory Coauthorship network and cross-domain collaboration Learning on data manifold Routing algorithm in heterogeneous dynamic distributed hash table
TEACHING	<ul style="list-style-type: none">• <i>Teaching assistant</i>, Swarthmore College Introduction to Econometrics Spring 2016• <i>Math clinician</i>, Swarthmore College Q&A sessions for all undergraduate math classes Spring 2016
OTHER EXPERIENCE	The Cornell, Maryland, Max Planck Pre-doctoral Research School Aug 2018 Selected as one of the 80 attendees worldwide with scholarship. Summer Analyst, Credit Suisse, Hong Kong Jun 2017 - Aug 2017 Credit and equity derivative structuring

Updated November 22, 2018