Suho Shin

Ph.D. Student at University of Maryland, College Park

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RESEARCH INTEREST

I'm interested in the intersection of theoretical computer science and microeconomics. This includes algorithmic mechanism design/game theory, social learning and social choice. Central theme of my research revolves around laying down the theoretical foundations of delegation mechanism, especially from combinatorial, learning, and multi-agent perspective. I'm also interested in classical topics in theoretical computer science, especially in online algorithm, online learning, approximation algorithm and combinatorial optimization.

EDUCATION

University of Maryland, College Park   Maryland, USA
Ph.D. in Computer Science   Sep. 2022 –

- Advisor: Prof. MohammadTaghi Hajiaghayi

Korea Advanced Institute of Science and Technology   Daejeon, South Korea
M.S. in Electrical Engineering   Mar. 2016 – Jan. 2018

- Advisor: Prof. Yung Yi

Korea Advanced Institute of Science and Technology   Daejeon, South Korea
B.S. in Mathematical Sciences   Mar. 2011 – Feb. 2016

PUBLICATION

(α, β) denotes alphabetical order of authorship, which is common in theoretical computer science/econ/math community.

Replication-proof Bandit Mechanism Design
$^{\alpha,\beta}$S. Esmaeili, M. Hajiaghayi, S. Shin   Manuscript

Robust and Performance Incentivizing Algorithms for Bandits with Strategic Agents
$^{\alpha,\beta}$S. Esmaeili, S. Shin, A. Slivkins   Manuscript

Online Advertisements with LLMs: Opportunities and Challenges
$^{\alpha,\beta}$S. Feizi, M. Hajiaghayi, K. Rezaei, S. Shin   Manuscript

Combinatorial Delegated Choice
$^{\alpha,\beta}$K. Banihashem, M. Hajiaghayi, P. Krysta, S. Shin   Available upon request

A Regret Analysis of Repeated Delegated Choice
$^{\alpha,\beta}$M. Hajiaghayi, M. Mahdavi, K. Rezaei, S. Shin   AAAI'24

An Improved Relaxation for Oracle-Efficient Adversarial Contextual Bandits
$^{\alpha,\beta}$K. Banihashem, M. Hajiaghayi, S. Shin, M. Springer   NeurIPS'23

Bandit Social Learning under Myopic Agents
$^{\alpha,\beta}$K. Banihashem, M. Hajiaghayi, S. Shin, A. Slivkins   NeurIPS'23

Delegating to Multiple Agents
$^{\alpha,\beta}$M. Hajiaghayi, K. Rezaei, S. Shin   EC'23

Multi-armed Bandit Algorithm against Strategic Replication.
S. Shin, S. Lee, J. Ok   AISTATS'22

Power of Bonus in Pricing for Crowdsourcing.
S. Shin, H. Choi, Y. Yi, J. Ok   SIGMETRICS'22

WORKING PAPER

Delegated Choice and Pandora's Box
$^{\alpha,\beta}$M. Hajiaghayi, P. Krysta, S. Shin

Improved Mechanism for Combinatorial Delegated Choice
$^{\alpha,\beta}$M. Hajiaghayi, P. Krysta, S. Shin

New Perspectives on Cake Cutting
$^{\alpha,\beta}$S. Branzei, M. Hajiaghayi, R. Phillips, S. Shin, K. Wang

Deciding Whom to Delegate
$^{\alpha,\beta}$M. Hajiaghayi, M. Mahdavi, S. Shin, M. Springer

Repeated Delegated Choice with Biased Agents
$^{\alpha,\beta}$M. Hajiaghayi, S. Shin

Improved Online Class Fair Matching
$^{\alpha,\beta}$M. Hajiaghayi, S. Jahan, M. Sharify, S. Shin, M. Springer

Improved Online Nash Social Welfare Maximization
$^{\alpha,\beta}$K. Banihashem, M. Hajiaghayi, E. Martinez, S. Shin, M. Springer

HONOR & AWARD

Outstanding Graduate Assistant Award AY 23-24   USA
University of Maryland (top 2% among graduate assistants)   Dec 2023

Travel Award   USA
ACM SIGecom, EC 2023   Jul 2023

Gradute School Summer Research Fellowship   USA
University of Maryland (declined)   Summer 2023

Dean's Fellowship   USA
University of Maryland   Fall 2022 – Fall 2024

The National Scholarship for Science and Engineering   South Korea
Korea Student Aid Foundation   Spring 2011 – Fall 2017

Dean's Award for Entrance   South Korea
Korea Advanced Institute of Science and Technology   Spring 2011

Gold Medal, Korean Mathematical Olympiad   South Korea
Korean Mathematical Society   Fall 2008

VISIT & INTERNSHIP

Visiting Student University of Liverpool
Host: Prof. Piotr Krysta Jul. 2023

Visiting Student SLMath, UC Berkeley
Topic: Mathematics and Computer Science of Market and Mechanism Design Jun. 2023

Research Intern Machine Learning Lab, Postech
Host: Prof. Jungseul Ok Summer 2022

SERVICE

Reviewer
NeurIPS'23,AISTATS'22

Volunteer
EC'23

TALK

Delegated Choice, Prophet Inequality, and Beyond Pohang, South Korea
Machine Learning Lab, Postech Jan. 2023

Delegating to Multiple Agents London, UK
ACM Conference on Economics and Computation (EC) Jul. 2023

Power of Bonus in Pricing for Crowdsourcing Virtual
Proceedings of the ACM on Measurement and Analysis of Computing Systems (POMACS) Jun. 2022

Multi-armed Bandit Algorithm against Strategic Replication Virtual
International Conference on Artificial Intelligence and Statistics (AISTATS) Mar. 2022

Mechanism Design and Multi-armed Bandit Virtual
Machine Learning Lab, Postech Feb. 2022

TEACHING

Introduction to Computational Game Theory (CMSC474) Fall 2023
Teaching Assistant UMD

Design and Analysis of Computer Algorithms (CMSC451) Spring 2023
Teaching Assistant UMD

Introduction to Computational Game Theory (CMSC474) Fall 2022
Teaching Assistant UMD

Data Structure and Algorithms for Electrical Engineering (EE205) Fall 2017
Teaching Assistant KAIST

Computer Networks (EE323) Spring 2017
Teaching Assistant KAIST

INDUSTRY

LINE plus Corporation, LINE Advertisement Platform   Seongnam, South Korea
Data Scientist   Oct. 2020 – Apr. 2022

Coupang, Product, Search and Discovery Platform   Jamsil, South Korea
Software Engineer   Aug. 2018 – Sep. 2020