Suho Shin

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

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RESEARCH INTEREST

I'm interested in the intersection of computer science and economics. This includes algorithmic mechanism design/game theory, social learning and social choice. Central theme of my research revolves around laying down a theoretical foundation of delegation mechanism, especially from learning, combinatorial and multi-agent perspective. Recently, I've got interested in constructing a theoretical foundation of LLM-based online advertisement and further impact of generative AI on the modern economy. I'm also interested in classic 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.*

Dueling Over Dessert, Mastering the Art of Repeated Cake Cutting
$^{\alpha,\beta}$S. Branzei, M. Hajiaghayi, R. Phillips, S. Shin, K. Wang   Preprint

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

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

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

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, M. Mahdavi, S. Shin

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

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

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   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

Research Intern   University of Chicago
Host: Prof. Haifeng Xu   Summer 2024

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
ICML'24,NeurIPS'23,AISTATS'22

Volunteer
EC'23

Mentoring
Harvard Student Research Institute'24

TALK

Regret Analysis of Repeated Delegated Choice   Vancouver, Canada
Association for the Advancement of Artificial Intelligence (AAAI)   Feb. 2024

Topics in Economics and Computation   Pohang, South Korea
Machine Learning Lab, Postech   Jan. 2024

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