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. Still, I'm broadly 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 with Inspection Cost
$^{\alpha,\beta}$*M. Hajiaghayi, P. Krysta, S. Shin*

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

Learning in Repeated Cake Cutting
$^{\alpha,\beta}$*S. Branzei, M. Hajiaghayi, R. Phillips, S. Shin, K. Wang*

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

Stackelberg Bandit: Repeated Delegated Choice with Learning Agent(s)
$^{\alpha,\beta}$*M. Hajiaghayi, S. Shin*

Price of Class Fairness in Online Matching
$^{\alpha,\beta}$*M. Hajiaghayi, S. Jahan, M. Sharify, S. Shin, M. Springer*

Almost Tight Guarantees for Online Nash Social Welfare Maximization
$^{\alpha,\beta}$*K. Banihashem, M. Hajiaghayi, E. Martinez, S. Shin, M. Springer*

Algorithmic Győri-Lovász Theorem
$^{\alpha,\beta}$*S. Goudarzi, M. Hajiaghayi, S. Shin*

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

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