Suho Shin

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

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RESEARCH INTEREST

I'm broadly interested in the intersection of computer science and economics. I aim to tackle mechanism design problems from algorithmic perspectives with applications to (i) classic economy, *e.g.,* auctions, exchange markets, and principal-agent problems, (ii) modern economy, *e.g.,* economic impact of recommender systems for online platforms and (iii) future economy, *e.g.,* the interplay between game theory and generative AI. I also work on classic topics in theoretical computer science, in particular, online algorithm, online learning, approximation algorithm, and computational complexity.

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.*

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

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

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

Gains-from-Trade in Bilateral Trade with a Broker — SODA'25
$^{\alpha,\beta}$*I. Hajiaghayi, M. Hajiaghayi, G. Peng, S. Shin*

Ad Auctions for LLMs via Retrieval Augmented Generation — NeurIPS'24
$^{\alpha,\beta}$*M. Hajiaghayi, S. Lahaie, K. Rezaei, S. Shin* — EC'24 Workshop

Dueling Over Dessert, Mastering the Art of Repeated Cake Cutting — NeurIPS'24
$^{\alpha,\beta}$*S. Branzei, M. Hajiaghayi, R. Phillips, S. Shin, K. Wang*

Fairness and Efficiency in Online Class Matching — NeurIPS'24
$^{\alpha,\beta}$*M. Hajiaghayi, S. Jahan, M. Sharify, S. Shin, M. Springer*

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

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

Bandit Social Learning under Myopic Agents NeurIPS'23,
$^{\alpha,\beta}$*K. Banihashem, M. Hajiaghayi, S. Shin, A. Slivkins* EC'24 Workshop, AMLS'24 (*best poster award*)

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

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

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

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

Program Committee
AAAI'25

Reviewer
NeurIPS'24,ICML'24,NeurIPS'23,AISTATS'22

Volunteer
EC'23

MENTORING/ADVISING

Mentoring
Chirag Jain (Undergrad at UMD) Aug. 2024 - WIP

Mentoring
Gary Peng (Undergrad at UMD) Dec. 2023 - WIP

Mentoring
Aya Sghiouar (High school student at Bouskoura High School) (HSRI'24) Summer 2024

TALK

Prophet Inequalty, Posted Pricing, and Delegated Choice Seoul, South Korea
Microecon Theory Seminar, Sungkyunkwan University Sep. 2024

Combinatorial Delegated Choice Jeju, South Korea
East Asia Game Theory Conference Aug. 2024

Ad Auctions for LLMs via Retrieval Augmented Generation New Haven, USA
EC'24 Workshop on Frontiers of Online Advertising: Autobidding, GenAI, and Beyond Jul. 2024

Delegated Choice, Prophet Inequality, and Beyond Chicago, USA
Sigma Lab, UChicago Jun. 2024

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 Computer Systems Fall 2024
Teaching Assistant UMD

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