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 study mechanism design problems from algorithmic perspectives with applications to (i) classic economy, *e.g.,* auctions and principal-agent problems, (ii) modern economy such as market design for online platforms and (iii) future economy including the interplay between game theory and generative AI. My recent research focuses on algorithmic delegated choice, contest design, and algorithmic contract theory. I also work on online algorithms and multi-armed bandit problems.

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.

Optimal Contest for Recommender Systems Working paper, SSRN link
$^{\alpha,\beta}$N. Golrezaei, M. Hajiaghayi, S. Shin MIW'25, 2025 PSOR best video competition (finalists)

Delegation with Costly Inspection EC'25
$^{\alpha,\beta}$M. Hajiaghayi, P. Krysta, M. Mahdavi, S. Shin

Delegated Choice with Combinatorial Constraints EC'25
$^{\alpha,\beta}$K. Banihashem, M. Hajiaghayi, P. Krysta, S. Shin

Tokenized Bandit for LLM Decoding and Alignment ICML'25
S. Shin, C. Yang, H. Xu, M. Hajiaghayi EC'25 workshops on Info/Econ/LLMs and Human-AI collab

Replication-proof Bandit Mechanism Design with Bayesian Agents AAAI'25 (oral)
S. Shin, S. Esmaeili, M. Hajiaghayi

Robust and Performance Incentivizing Algorithms for Bandits with Strategic Agents AAAI'25
S. Esmaeili, S. Shin, A. Slivkins

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

EXPOSITORY ARTICLES

Algorithmic Delegated Choice: An Annotated Reading List — SIGecom Exchanges Vol 23.1, 2025
$^{\alpha,\beta}$*M. Hajiaghayi, S. Shin*

Online Advertisements with LLMs — SIGecom Exchanges Vol 22.2, 2025
$^{\alpha,\beta}$*S. Feizi, M. Hajiaghayi, K. Rezaei, S. Shin*

HONOR & AWARD

Outstanding Graduate Assistant Award AY 23-24 — USA
University of Maryland — Dec 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 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
WINE'25

Reviewer
SODA'26,AAAI'26,ICML'25,AAAI'25,NeurIPS'24,ICML'24,NeurIPS'23,AISTATS'22

MENTORING/ADVISING

Mentoring
Gary Peng (Undergrad at UMD). Received CRA award (link)   Dec. 2023 - WIP

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

TALK

Delegated Choice with Costly Inspection   Georgia, USA
INFORMS Annual Meeting, Auctions and Market Design Award Session   Oct. 2025

Tokenized Bandit for LLM Decoding and Alignment   Georgia, USA
INFORMS Annual Meeting, Invited Session   Oct. 2025

Optimal Contest for Recommender Systems   Georgia, USA
INFORMS Annual Meeting, PSOR Business Meeting Award Session   Oct. 2025

Delegation with Costly Inspection   Stanford, USA
ACM Conference on Economics and Computation (EC)   Jul. 2025

Delegated Choice with Combinatorial Constraints   Stanford, USA
ACM Conference on Economics and Computation (EC)   Jul. 2025

Replication-proof Bandit Mechanism Design with Bayesian Agents   Philadelphia, USA
Association for the Advancement of Artificial Intelligence (AAAI)   Feb. 2025

Gains-from-Trade in Bilateral Trade with a Broker   New Orleans, USA
Symposium on Discrete Algorithm (SODA)   Jan. 2025

Prophet Inequality, 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

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

Mechanism Design and Multi-armed Bandits   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