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) classical 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 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 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

Online Advertisements with LLMs: Opportunities and Challenges   SIGecom exchanges, Winter'24
$^{\alpha,\beta}$S. Feizi, M. Hajiaghayi, K. Rezaei, 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

Travel Award USA
SIAM SODA 2025 Jan 2025

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
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

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