Suho Shin

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

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RESEARCH INTEREST

I am interested in mechanism design and market design, broadly construed. A core thread throughout my research is the development of the foundations of delegated decision-making under uncertainty, with various applications spanning from classic markets and organization, modern online platforms, to emerging ecosystem shaped by generative AI.

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   STOC'26
$^{\alpha,\beta}$N. Golrezaei, M. Hajiaghayi, S. Shin

- Job Market Paper

- 2025 Market Innovation Workshop

- 2025 PSOR best video competition, finalists (Youtube link)

Single-Sample Bilateral Trade with a Broker   WWW'26
$^{\alpha,\beta}$M. Hajiaghayi, G. Peng, S. Shin

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

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

- Under review at Operations Research

Tokenized Bandit for LLM Decoding and Alignment ICML'25
S. Shin, C. Yang, H. Xu, M. Hajiaghayi

- *EC'25 workshop on Info/Econ/LLMs*

- *EC'25 workshop on 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*

Online Advertisements with LLMs SIGecom Exchanges Vol 22.2, 2025
$^{\alpha,\beta}$*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 on Frontiers of Online Advertising: Autobidding, GenAI, and Beyond*

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

- *Under review at Math of Operations Research*

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*

- *Under review at Math of Operations Research*

- *EC'24 Workshop on Information Acquisition*

- *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

TEACHING

Advanced Topics in Theory of Computing; Algorithmic Game Theory (CMSC858J) Fall 2025
Guest Lecturer (4 full lectures) UMD

Introduction to Computer Systems Fall 2024
Teaching Assistant (~ 300 students) UMD

Introduction to Computational Game Theory (CMSC474) Fall 2023
Head Teaching Assistant (~ 100 students) UMD

Design and Analysis of Computer Algorithms (CMSC451) Spring 2023
Teaching Assistant (~ 100 students) UMD

Introduction to Computational Game Theory (CMSC474) Fall 2022
Head Teaching Assistant (~ 30 students) UMD

Data Structure and Algorithms for Electrical Engineering (EE205) Fall 2017
Teaching Assistant KAIST

Computer Networks (EE323) Spring 2017
Teaching Assistant KAIST

HONOR & AWARD

Jane Street Graduate Research Fellowship (Honorable Mention) USA
Jane Street Feb 2026

PSOR Best Video Competition (Finalist) USA
INFORMS Public and Societal Operations Research Oct 2025

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

INDUSTRY EXPERIENCE

LINE plus Corporation, LINE Advertisement Platform   Seongnam, South Korea
Data scientist, ML engineer   Oct. 2020 – Apr. 2022

Coupang, Product, Search and Discovery Platform   Jamsil, South Korea
Software Engineer   Aug. 2018 – Sep. 2020

SERVICE

Program Committee
EC'26, AAAI'26,WINE'25,AAAI'25

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

MENTORING/ADVISING

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

- Received CRA Outstanding Undergraduate Researcher Awards (link)

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

TALK

Optimal Contest beyond Convexity   Daejeon, Korea
KAIST ISE Winter Symposium   Dec. 2025

Modern Topics in Algorithmic Game Theory   Pohang, Korea
Eat and Learn Seminar, Center for Algorithms & Optimization, Postech   Dec. 2025

Tokenized Bandit for LLM Decoding and Alignment   Virtual
Ploutos AI   Dec. 2025

Delegation with Costly Inspection
INFORMS Annual Meeting, Auctions and Market Design Award Session

Georgia, USA
Oct. 2025

Tokenized Bandit for LLM Decoding and Alignment
INFORMS Annual Meeting, Invited Session

Georgia, USA
Oct. 2025

Optimal Contest for Recommender Systems
INFORMS Annual Meeting, PSOR Business Meeting Award Session

Georgia, USA
Oct. 2025

Delegation with Costly Inspection
ACM Conference on Economics and Computation (EC)

Stanford, USA
Jul. 2025

Delegated Choice with Combinatorial Constraints
ACM Conference on Economics and Computation (EC)

Stanford, USA
Jul. 2025

Replication-proof Bandit Mechanism Design with Bayesian Agents
Association for the Advancement of Artificial Intelligence (AAAI)

Philadelphia, USA
Feb. 2025

Gains-from-Trade in Bilateral Trade with a Broker
Symposium on Discrete Algorithm (SODA)

New Orleans, USA
Jan. 2025

Prophet Inequality, Posted Pricing, and Delegated Choice
Microecon Theory Seminar, Sungkyunkwan University

Seoul, South Korea
Sep. 2024

Combinatorial Delegated Choice
East Asia Game Theory Conference

Jeju, South Korea
Aug. 2024

Ad Auctions for LLMs via Retrieval Augmented Generation
EC'24 Workshop on Frontiers of Online Advertising: Autobidding, GenAI, and Beyond

New Haven, USA
Jul. 2024

Delegated Choice, Prophet Inequality, and Beyond
Sigma Lab, UChicago

Chicago, USA
Jun. 2024

Topics in Economics and Computation
Machine Learning Lab, Postech

Pohang, South Korea
Jan. 2024

Delegating to Multiple Agents
ACM Conference on Economics and Computation (EC)

London, UK
Jul. 2023

Mechanism Design and Multi-armed Bandits
Machine Learning Lab, Postech

Virtual
Feb. 2022

REFERENCES

Prof. MohammadTaghi Hajiaghayi
Jack and Rita G. Minker Professor

hajiagha@umd.edu
Computer Science, University of Maryland

- Affiliated Professor *Robert H. Smith School of Business, University of Marlynad*

- Affiliated Professor *Applied Mathematics & Statistics, and Scientific Computation, University of Maryland*

- Visiting Research Scientist *Market Algorithms, Google Research*

Prof. Negin Golrezaei
Associate Professor

golrezae@mit.edu
Operations Management, MIT Sloan

- Theresa Seley Associate Professor *Management Science, MIT Sloan*
- Affiliated Professor *Operations Research Center, MIT Sloan*
- Affiliated Professor *Management Science, MIT IBM Watson AI Lab*

Prof. Haifeng Xu haifengxu@uchicago.edu
Assistant Professor Computer Science, University of Chicago

- Visiting Research Scientist *Market Algorithms, Google Research*

Dr. Sébastien Lahaie slahaie@google.com
Research Scientist Market Algorithms, Google Research, NY