Suho Shin

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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 — Working paper
$^{\alpha,\beta}$*N. Golrezaei, M. Hajiaghayi, S. Shin*

- *Job Market Paper (link)*
- *2025 Market Innovation Workshop*
- *2025 PSOR best video competition, finalists (Youtube link)*

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

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

Jane Street Graduate Research Fellowship (rising star) USA
Jane Street Feb 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

Delegation 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

REFERENCES

Prof. MohammadTaghi Hajiaghayi — hajiagha@umd.edu
Jack and Rita G. Minker Professor — 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 — golrezae@mit.edu
Associate Professor — 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