Suho Shin

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

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RESEARCH INTEREST

I'm interested in the intersection of computer science and economics. This includes algorithmic mechanism design/game theory, social learning and social choice. Central theme of my research revolves around laying down a theoretical foundation of delegation mechanism, especially from learning, combinatorial and multi-agent perspective. Recently, I've got interested in constructing a theoretical foundation of LLM-based online advertisement and further impact of generative AI on the modern economy. I'm also interested in classic topics in theoretical computer science, especially in online algorithm, online learning, approximation algorithm and combinatorial optimization.

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 Mar. 2011 – Feb. 2016

B.S. in Mathematical Sciences

PUBLICATION

 (α, β) denotes alphabetical order of authorship, which is common in theoretical computer science/econ/math community.

Dueling Over Dessert, Mastering the Art of Repeated Cake Cutting

 $^{\alpha,\beta}$ S. Branzei, M. Hajiaghayi, R. Phillips, S. Shin, K. Wang

Preprint

Replication-proof Bandit Mechanism Design

 $^{\alpha,\beta}S$. Esmaeili, M. Hajiaghavi, S. Shin

Preprint

Robust and Performance Incentivizing Algorithms for Bandits with Strategic Agents

 $^{\alpha,\beta}$ S. Esmaeili, S. Shin, A. Slivkins

Preprint

Online Advertisements with LLMs: Opportunities and Challenges

 $^{\alpha,\beta}$ S. Feizi, M. Hajiaghayi, K. Rezaei, S. Shin

Preprint

Combinatorial Delegated Choice

 $^{\alpha,\beta}$ K. Banihashem, M. Hajiaghayi, P. Krysta, S. Shin

Available upon request

A Regret Analysis of Repeated Delegated Choice

 α,β M. Hajiaghayi, M. Mahdayi, K. Rezaei, S. Shin

AAAI'24

An Improved Relaxation for Oracle-Efficient Adversarial Contextual Bandits $^{\alpha,\beta}K$. Banihashem, M. Hajiaghayi, S. Shin, M. Springer	NeurIPS'23
Bandit Social Learning under Myopic Agents $^{\alpha,\beta}K$. Banihashem, M. Hajiaghayi, S. Shin, A. Slivkins	NeurIPS'23
Delegating to Multiple Agents α,β M . Hajiaghayi, K . Rezaei, S . Shin	EC'23
Multi-armed Bandit Algorithm against Strategic Replication. S. Shin, S. Lee, J. Ok	AISTATS'22
Power of Bonus in Pricing for Crowdsourcing. S. Shin, H. Choi, Y. Yi, J. Ok	SIGMETRICS'22
WORKING PAPER	
Delegated Choice and Pandora's Box $^{\alpha,\beta}M$. Hajiaghayi, P. Krysta, M. Mahdavi, S. Shin	
Improved Mechanism for Combinatorial Delegated Choice $^{\alpha,\beta}M$. Hajiaghayi, P. Krysta, S. Shin	
Deciding Whom to Delegate $^{\alpha,\beta}M$. Hajiaghayi, M. Mahdavi, S. Shin, M. Springer	
Improved Online Class Fair Matching $^{\alpha,\beta}M$. Hajiaghayi, S. Jahan, M. Sharify, S. Shin, M. Springer	
Improved Online Nash Social Welfare Maximization $^{\alpha,\beta}K$. Banihashem, M. Hajiaghayi, E. Martinez, S. Shin, M. Springer	
HONOR & AWARD	
Outstanding Graduate Assistant Award AY 23-24 University of Maryland	USA Dec 2023
Travel Award ACM SIGecom, EC 2023	USA Jul 2023
Gradute School Summer Research Fellowship University of Maryland (declined)	USA Summer 2023
Dean's Fellowship University of Maryland	USA Fall 2022 – Fall 2024
The National Scholarship for Science and Engineering Korea Student Aid Foundation	South Korea Spring 2011 – Fall 2017
Dean's Award for Entrance	South Korea

Spring 2011

South Korea

Fall 2008

Korea Advanced Institute of Science and Technology

Gold Medal, Korean Mathematical Olympiad

Korean Mathematical Society

VISIT & INTERNSHIP

Research InternHost: Prof. Haifeng Xu
University of Chicago
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

Reviewer

ICML'24, NeurIPS'23, AISTATS'22

Volunteer

EC'23

Mentoring

Harvard Stuent Research Institute'24

TALK

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 Computational Game Theory (CMSC474) Fall 2023

Teaching Assistant UMD

Design and Analysis of Computer Algorithms (CMSC451) Spring 2023

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

Fall 2022

Jamsil, South Korea

UMD

 $\underline{\underline{Coupang}}, Product, Search \ and \ Discovery \ Platform$

Introduction to Computational Game Theory (CMSC474)

Teaching Assistant

Software Engineer Aug. 2018 – Sep. 2020