

# Suho Shin

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

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## RESEARCH INTEREST

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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 foundation of LLM-based online advertisement. I'm also interested in classical topics in theoretical computer science, especially in online algorithm, online learning, approximation algorithm and combinatorial optimization.

## EDUCATION

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**University of Maryland, College Park**

*Ph.D. in Computer Science*

Maryland, USA

Sep. 2022 –

- Advisor: [Prof. MohammadTaghi Hajiaghayi](#)

**Korea Advanced Institute of Science and Technology**

*M.S. in Electrical Engineering*

Daejeon, South Korea

Mar. 2016 – Jan. 2018

- Advisor: [Prof. Yung Yi](#)

**Korea Advanced Institute of Science and Technology**

*B.S. in Mathematical Sciences*

Daejeon, South Korea

Mar. 2011 – Feb. 2016

## PUBLICATION

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$(\alpha, \beta)$  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. Hajiaghayi, 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**

$\alpha, \beta$  M. Hajiaghayi, M. Mahdavi, 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**

$\alpha, \beta$  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**

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### **Delegated Choice and Pandora's Box**

$\alpha, \beta$  M. Hajiaghayi, P. Krysta, 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**

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### **Outstanding Graduate Assistant Award AY 23-24**

University of Maryland (top 2% among graduate assistants)

USA

Dec 2023

### **Travel Award**

ACM SIGecom, EC 2023

USA

Jul 2023

### **Graduate 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**

Korea Advanced Institute of Science and Technology

South Korea

Spring 2011

### **Gold Medal, Korean Mathematical Olympiad**

Korean Mathematical Society

South Korea

Fall 2008

## VISIT & INTERNSHIP

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### Research Intern

Host: [Prof. Haifeng Xu](#)

University of Chicago

Summer 2024

### Visiting Student

Host: [Prof. Piotr Krysta](#)

University of Liverpool

Jul. 2023

### Visiting Student

Topic: [Mathematics and Computer Science of Market and Mechanism Design](#)

SLMath, UC Berkeley

Jun. 2023

### Research Intern

Host: [Prof. Jungseul Ok](#)

Machine Learning Lab, Postech

Summer 2022

## SERVICE

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### Reviewer

ICML '24, NeurIPS '23, AISTATS '22

### Volunteer

EC'23

## TALK

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### Regret Analysis of Repeated Delegated Choice

Association for the Advancement of Artificial Intelligence (AAAI)

Vancouver, Canada

Feb. 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

### Power of Bonus in Pricing for Crowdsourcing

Proceedings of the ACM on Measurement and Analysis of Computing Systems (POMACS)

Virtual

Jun. 2022

### Multi-armed Bandit Algorithm against Strategic Replication

International Conference on Artificial Intelligence and Statistics (AISTATS)

Virtual

Mar. 2022

### Mechanism Design and Multi-armed Bandit

Machine Learning Lab, Postech

Virtual

Feb. 2022

## TEACHING

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### Introduction to Computational Game Theory (CMSC474)

Teaching Assistant

Fall 2023

UMD

### Design and Analysis of Computer Algorithms (CMSC451)

Teaching Assistant

Spring 2023

UMD

### Introduction to Computational Game Theory (CMSC474)

Teaching Assistant

Fall 2022

UMD

**Data Structure and Algorithms for Electrical Engineering (EE205)**

*Teaching Assistant*

Fall 2017

KAIST

**Computer Networks (EE323)**

*Teaching Assistant*

Spring 2017

KAIST

## INDUSTRY

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**LINE plus Corporation, LINE Advertisement Platform**

*Data Scientist*

Seongnam, South Korea

Oct. 2020 – Apr. 2022

**Coupang, Product, Search and Discovery Platform**

*Software Engineer*

Jamsil, South Korea

Aug. 2018 – Sep. 2020