

# Suho Shin

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

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## RESEARCH INTEREST

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I'm broadly interested in the intersection of theoretical computer science and microeconomics. This includes algorithmic mechanism design/game theory, social learning and social choice. I'm also interested in online algorithm, online learning, graph algorithm and combinatorial optimization. I've recently been focusing on laying down the theoretical foundations of delegation mechanism, especially from combinatorial, learning, and multi-agent perspective.

## EDUCATION

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**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

## PUBLICATIONS

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$(\alpha, \beta)$  denotes alphabetical order of authorship, which is common in theoretical computer science/econ/math community.

**Online Advertisements with LLMs: Opportunities and Challenges**

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

[Manuscript](#)

**Combinatorial Delegated Choice**

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

Under review

**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 PAPERS

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### **Delegated Choice with Inspection Cost**

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

### **Optimal Mechanism for Combinatorial Delegated Choice**

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

### **Learning in Repeated Cake Cutting**

$\alpha, \beta$  *S. Branzei, M. Hajiaghayi, R. Phillips, S. Shin, K. Wang*

### **Deciding Whom to Delegate**

$\alpha, \beta$  *M. Hajiaghayi, S. Shin, M. Springer*

### **Stackelberg Bandit: Repeated Delegated Choice with Learning Agent(s)**

$\alpha, \beta$  *M. Hajiaghayi, S. Shin*

### **Price of Class Fairness in Online Matching**

$\alpha, \beta$  *M. Hajiaghayi, S. Jahan, M. Sharify, S. Shin, M. Springer*

### **Incentivizing Performance in Bandits with Strategic Arms**

$\alpha, \beta$  *S. Esmaeili, S. Shin, A. Slivkins*

### **Replication-proof Bandit Mechanism Design**

$\alpha, \beta$  *S. Esmaeili, M. Hajiaghayi, S. Shin*

### **Almost Tight Guarantees for Online Nash Social Welfare Maximization**

$\alpha, \beta$  *K. Banihashem, M. Hajiaghayi, E. Martinez, S. Shin, M. Springer*

## HONORS & AWARDS

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### **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

## VISITS & INTERNSHIPS

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### 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

## ACADEMIC SERVICE

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### Reviewer

*NeurIPS'23, AISTATS'22*

## TALKS

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### 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