

# Jeonghwan Lee

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## Research interests

- ◇ **Theory of statistics:** high-dimensional and non-parametric statistics.
- ◇ **Causal inference** with an emphasis on (non-asymptotic) theoretical viewpoints.
- ◇ **Machine learning theory:** statistical foundations of reinforcement learning, optimization, and learning in games.
- ◇ **Probability theory:** learning in the space of probability measures (e.g., sampling algorithms, diffusion models, and geometry of the space of probability measures).

## Education

**The University of Chicago.**

Chicago, IL, United States

- ◇ Ph.D. candidate in [Statistics](#): Sep. 2022 –.

**Korea Advanced Institute of Science and Technology.**

Daejeon, Republic of Korea

- ◇ Bachelor of Science in [Mathematical Sciences](#): Mar. 2015 – Feb. 2022.
- ◇ Graduated with Summa Cum Laude (**GPA:** 4.10/4.30 (Overall), 4.21/4.30 (Major)).
- ◇ Left for mandatory military service: Oct. 2018 – Aug. 2020.

## Publications

Here, \* denotes equal contribution.

### Peer-reviewed conference papers

- C1. **Off-policy estimation with adaptively collected data: the power of online learning**
  - ◇ Jeonghwan Lee and Cong Ma.
  - ◇ *The 38<sup>th</sup> Annual Conference on Neural Information Processing Systems (NeurIPS)*, to appear, Dec. 2024.
- C2. **A Generalized Worker-Task Specialization Model for Crowdsourcing: Optimal Limits and Algorithm**
  - ◇ Doyeon Kim\*, Jeonghwan Lee\*, and Hye Won Chung.
  - ◇ *Proceedings of IEEE International Symposium on Information Theory (ISIT)*, Jul. 2022. (Link: [arXiv:2111.12550](https://arxiv.org/abs/2111.12550)).

### Journal articles

- J1. **A Worker-Task Specialization Model for Crowdsourcing: Efficient Inference and Fundamental Limits**
  - ◇ Doyeon Kim\*, Jeonghwan Lee\*, and Hye Won Chung.
  - ◇ *IEEE Transactions on Information Theory*, Vol. 70, Iss. 3, pp. 2076–2117, Mar. 2024. (Link: [arXiv:2111.12550](https://arxiv.org/abs/2111.12550)).

J2. **Robust Hypergraph Clustering via Convex Relaxation of Truncated MLE**

- ◇ Jeonghwan Lee, Daesung Kim, and Hye Won Chung.
- ◇ *IEEE Journal on Selected Areas in Information Theory (JSAIT)*, Vol. 1, Iss. 3, pp. 613–631, Nov. 2020. (Link: [arXiv:2003.10038](https://arxiv.org/abs/2003.10038)).

Honors and  
scholarships

**Doctoral Overseas Scholarship.** Sep. 2022 –

- ◇ Kwanjeong Educational Foundation.

**The KAIST Presidential Award.** Feb. 2022

- ◇ The 2022 Commencement Ceremony of [KAIST](#).

**KAIST Math Problem Of the Week (POW).** Jun. 2019

- ◇ Department of Mathematical Sciences at [KAIST](#).
- ◇ Excellence award.

**University Students Contest of Mathematics.** Dec. 2017

- ◇ [Korean Mathematical Society](#).
- ◇ Silver prize (for majors).

**Dean's List.** Sep. 2017

- ◇ [College of Natural Sciences](#) at [KAIST](#).

**Honor Student at [KAIST](#).** Aug. 2017 – Present

**National Excellence Scholarship for Science & Engineering.** Mar. 2017 – Jun. 2021

- ◇ Korea Student Aid Foundation.

**Department Honorary Scholarship.** Mar. 2017 – Jun. 2017

- ◇ Department of Mathematical Sciences at [KAIST](#).
- ◇ Awarded to the top student in the previous semester.

Teaching  
experience

**Teaching assistants at [the University of Chicago](#).**

- ◇ STAT 22000: Statistical methods and applications. Autumn 2023
- ◇ STAT 22000: Statistical methods and applications. Winter 2023

Work  
experience

**Learning support volunteer activity.** Mar. 2019 – Dec. 2019

- ◇ The place of work: Jinju Dong Middle School.
- ◇ Worked as a mathematics learning support assistant for two semesters.

**Republic of Korea Air Force.** Oct. 2018 – Aug. 2020

- ◇ The place of work: Education and Training Command of the Republic of Korea Air Force.
- ◇ Worked as an aerographer (Mandatory military service).
- ◇ Starting position: Airman Basic / Ending position: Staff Sergeant.

**[KAIST Undergraduate Math Colloquium \(KUMC\)](#).** Sep. 2016 – Jun. 2018

- ◇ Department of Mathematical Sciences at [KAIST](#).
- ◇ Worked as a colloquium organizer.

Attended  
schools  
& programs

**Statistics annual winter workshop: Causal inference and its applications.**

Jan. 2024

- ◇ Department of Statistics and Department of Economics at the University of Florida.

**Big Data and Machine Learning in Econometrics, Finance, and Statistics.**

Oct. 2022

- ◇ The Stevanovich Center for Financial Mathematics at the University of Chicago.

**The 2nd Workshop on Seeking Low-dimensionality in Deep Neural Networks.**

Nov. 2021

- ◇ IEEE Information Theory Society.

**Summer School on Random Structures in Optimizations & Related Applications.**

Jun. 2021

- ◇ The School of Mathematics at the University of Minnesota, Twin Cities.

**The 17th KIAS Combinatorics Workshop.**

Aug. 2017

- ◇ Korea Institute for Advanced Study.
- ◇ A special event as *Summer School for Combinatorics*.

Skills

**Computer skills**

- ◇ Programming experiences: Python, C++, Java, MATLAB, R.
- ◇ Softwares & Tools:  $\text{\LaTeX}$ , Excel.

**Languages**

- ◇ Korean: Native.
- ◇ English: Fluent.
- ◇ Japanese: Moderate.

References

Professor Cong Ma.

- ◇ Assistant Professor in the Department of Statistics at the University of Chicago.
- ◇ E-mail: [congma@uchicago.edu](mailto:congma@uchicago.edu).

Professor Hye Won Chung.

- ◇ Associate Professor in the School of Electrical Engineering (jointly affiliated with the School of Computing) at KAIST.
- ◇ E-mail: [hwchung@kaist.ac.kr](mailto:hwchung@kaist.ac.kr).