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 –.
⋄ **Advisor**: Professor Cong Ma.

Korea Advanced Institute of Science and Technology   Daejeon, Republic of Korea
⋄ Bachelor of Science in Mathematical Sciences: Mar. 2015 – Feb. 2022.
⋄ Graduated with honors (Summa Cum Laude and the KAIST Presidential Award).
⋄ 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 38th 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.
⋄ The *proceedings of IEEE International Symposiym on Information Theory (ISIT)*, Jul. 2022. (Link: arXiv: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, no. 3, pp. 2076–2117, Mar. 2024. (Link: arXiv: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, no. 3, pp. 613–631, Nov. 2020. (Link: arXiv:2003.10038).

Honors and scholarships	**Doctoral Overseas Scholarship.** ◇ Kwanjeong Educational Foundation.	Sep. 2022 –
	The KAIST Presidential Award. ◇ The 2022 Commencement Ceremony of KAIST.	Feb. 2022
	KAIST Math Problem Of the Week (POW). ◇ Department of Mathematical Sciences at KAIST. ◇ Excellence award.	Jun. 2019
	University Students Contest of Mathematics. ◇ Korean Mathematical Society. ◇ Silver prize (for majors).	Dec. 2017
	Dean's List. ◇ College of Natural Sciences at KAIST.	Sep. 2017
	Honor Student at KAIST.	Aug. 2017 – Present
	National Excellence Scholarship for Science & Engineering. ◇ Korea Student Aid Foundation.	Mar. 2017 – Jun. 2021
	Department Honorary Schloarship. ◇ Department of Mathematical Sciences at KAIST. ◇ Awarded to the top student in the previous semester.	Mar. 2017 – Jun. 2017
Teaching experience	**Teaching assistants at the University of Chicago.** ◇ STAT 22000: Statistical methods and applications. ◇ STAT 22000: Statistical methods and applications.	Autumn 2023 Winter 2023
Work experience	**Learning support volunteer activity.** ◇ The place of work: Jinju Dong Middle School. ◇ Worked as a mathematics learning support assistant for two semesters.	Mar. 2019 – Dec. 2019
	Republic of Korea Air Force. ◇ 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.	Oct. 2018 – Aug. 2020
	KAIST Undergraduate Math Colloquium (KUMC). ◇ Department of Mathematical Sciences at KAIST. ◇ Worked as a colloquium organizer.	Sep. 2016 – Jun. 2018

Attended schools & programs	**Statistics annual winter workshop: Causal inference and its applications.**

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: 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: congm@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.