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, statistical learning under distribution shift, optimization, and learning in games.

◇ **Probability theory**: Learning in 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

Published works (Here, ∗ denotes equal contribution.)

1. **Off-policy estimation with adaptively collected data: the power of online learning.**

   ◇ **Jeonghwan Lee** and Cong Ma.

   ◇ 38th *Annual Conference on Neural Information Processing Systems (NeurIPS)*, Dec. 2024. (Link: arXiv:2411.12786).

2. **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).

3. **A Generalized Worker-Task Specialization Model for Crowdsourcing: Optimal Limits and Algorithm.**

   ◇ Doyeon Kim∗, **Jeonghwan Lee**∗, and Hye Won Chung.

   ◇ Proceedings of the *IEEE International Symposiym on Information Theory (ISIT)*, Jul. 2022.

4. **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.**	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 Schloarship.	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.	Winter 2025
	⋄ 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.	
Attended Programs	**38th Annual Conference on Neural Information Processing Systems (NeurIPS).**	
	⋄ The NeurIPS Foundation.	Dec. 2024
	Statistics annual winter workshop: Causal inference and its applications.	
	⋄ Dept. of Statistics and Dept. of Economics at the University of Florida.	Jan. 2024

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

⋄ Stevanovich Center for Financial Mathematics at the University of Chicago.   Oct. 2022

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

⋄ IEEE Information Theory Society.   Nov. 2021

Summer School on Random Structures in Optimizations & Related Applications.

⋄ The School of Mathematics at the University of Minnesota, Twin Cities.   Jun. 2021

The 17th KIAS Combinatorics Workshop.

⋄ Korea Institute for Advanced Study.   Aug. 2017

Skills   **Computer Skills**

⋄ Programming languages: Python, C++, Java, MATLAB, R.

⋄ Softwares: LaTeX, Excel.

Languages

⋄ Korean: Native.

⋄ English: Fluent.

⋄ Japanese: Moderate.

References   Professor Cong Ma (congm@uchicago.edu)

⋄ *Assistant Professor* in the Department of Statistics at the University of Chicago.

Professor Hye Won Chung (hwchung@kaist.ac.kr)

⋄ *Associate Professor* in the School of Electrical Engineering and the School of Computing at KAIST.