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$^{\text{th}}$ *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.**	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.	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: 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.