

Chungpa Lee

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EDUCATION

- Mar 2021 – Present **Yonsei University**, Seoul, Republic of Korea
Integrated Ph.D. Candidate, Statistics and Data Science
GPA: 4.22/4.30 (4.00/4.00)
Expected Graduation: Aug 2027
- Mar 2015 - Feb 2021 **Yonsei University**, Seoul, Republic of Korea
Bachelor of Arts in Applied Statistics, Minor in Economics
Overall GPA: 3.93/4.30 (3.77/4.00), Major GPA in Applied Statistics: 4.13/4.30 (3.92/4.00)
- Feb 2017 - Nov 2018 Military Service (Leave of Absence)

WORK EXPERIENCE

- Expected Aug 2026 – **Incoming Student Intern**, Paul G. Allen School of Computer Science and Engineering,
University of Washington
Host: Prof. Sewoong Oh
- May 2025 – Apr 2026 **Visiting Researcher**, Department of Electrical and Computer Engineering,
University of Wisconsin–Madison
Host: Prof. Kangwook Lee
- May 2022 – Sep 2024 **Manager**, Data Science Team, **GRETA Inc.**
Directors: Prof. Joseph H.T. Kim and Prof. Jongho Im
– Led the development of a synthetic data generation solution (Mar 2023 – Sep 2024)
– Developed a forecasting model for auto parts at Hyundai Mobis (Sep 2022 – Feb 2023)
– Developed a synthetic data generation solution for CRO companies (Jun 2022 – Feb 2023)
– Developed a statistical analysis solution (Part-time; Jul 2021 – Dec 2021)
- Mar 2023 – Aug 2024 **Consulting Assistant**, Institute of Data Science, **Yonsei University**
Director: Prof. Seungho Kang
– Provided statistical consulting for academic research, delivering over 20 successful projects

HONORS AND AWARDS

- Aug 2026 – Aug 2027 Shin Dongwook Study Abroad (Scholarship),
Yonsei University
- May 2025 – Apr 2026 BK21 FOUR International Joint Training Support for Outstanding Graduate Students,
National Research Foundation of Korea
- Fall 2021, Spring 2025 Academy Research Fellowship
Yonsei University
- Mar 2021 - Feb 2023 Yongwoon Scholarship

RESEARCH INTERESTS

My research focuses on developing theory that explains when and why machine learning works and guides the design of more effective algorithms. My current work studies the theoretical foundations of **Language Models** and **Representation Learning**.

WORKING PAPER

- [1] *Same Concept, Different Directions: Cross-Modal Feature Heterogeneity in Sparse Autoencoders*
Chungpa Lee*, Jihoon Kwon*, Kyle Min, Jy-yong Sohn
(under review)
*Equal contribution
- [2] *Rethinking Representation Geometry in Supervised Contrastive Learning under Long-Tailed Data*
JoonHyeok Jeong, **Chungpa Lee**, Jy-yong Sohn, Kibok Lee
(under review)
- [3] *Poisson Regression with Additive Exponential Mean: Statistical Modeling and Insurance Applications*
Chungpa Lee, Joseph H.T. Kim
(under review)

PUBLICATIONS

- [1] *How to Correctly Report LLM-as-a-Judge Evaluations*
Chungpa Lee, Thomas Zeng, Jongwon Jeong, Jy-yong Sohn, Kangwook Lee
Proceedings of the 43rd International Conference on Machine Learning (ICML), 2026
- [2] *Fine-Tuning Without Forgetting In-Context Learning: A Theoretical Analysis of Linear Attention Models*
Chungpa Lee, Jy-yong Sohn, Kangwook Lee
Proceedings of the 43rd International Conference on Machine Learning (ICML), 2026
- [3] *Transformers in the Dark: Navigating Unknown Search Spaces via Bandit Feedback*
Jungtaek Kim, Thomas Zeng, Ziqian Lin, Minjae Lee, **Chungpa Lee**, Jy-yong Sohn, Hyung Il Koo, Kangwook Lee
Transactions on Machine Learning Research (TMLR), 2026
- [4] *On the Similarities of Embeddings in Contrastive Learning*
Chungpa Lee, Sehee Lim, Kibok Lee, Jy-yong Sohn
Proceedings of the 42nd International Conference on Machine Learning (ICML), 2025
- [5] *A Generalized Theory of Mixup for Structure-Preserving Synthetic Data*
Chungpa Lee, Jongho Im, Joseph H.T. Kim
Proceedings of The 28th International Conference on Artificial Intelligence and Statistics (AISTATS), 2025
- [6] *A Theoretical Framework for Preventing Class Collapse in Supervised Contrastive Learning*
Chungpa Lee, Jeongheon Oh, Kibok Lee, Jy-yong Sohn
Proceedings of The 28th International Conference on Artificial Intelligence and Statistics (AISTATS), 2025
- [7] *Analysis of Using Sigmoid Loss for Contrastive Learning*
Chungpa Lee, Joonhwan Chang, and Jy-yong Sohn
Proceedings of The 27th International Conference on Artificial Intelligence and Statistics (AISTATS), 2024

ACTIVITIES

- Reviewer for ICML 2026, Mechanistic Interpretability Workshop at ICML 2026, NeurIPS 2026.

TEACHING EXPERIENCE

- Mar 2021 – Feb 2025 **Teaching Assistant at Yonsei University**
Department of Statistics and Data Science
– STA9200 Advanced Deep Learning Theory (Fall 2024)
– STA9403 Big Data Analysis For Industrial Application (Spring 2022, Fall 2022)
Department of Applied Statistics
– STA3125 Regression Analysis (Spring 2021, Fall 2021, Spring 2022, Fall 2022)
– STA1001 Introduction to Statistics (Spring 2021, Fall 2021, Spring 2022)
– STA4111 Statistics for Insurance (Spring 2022)
Graduate School of Economics
– RC597 Understanding the Global Economy (Fall 2021)

REFERENCES

1. **Joseph H.T. Kim**
Professor, Department of Statistics and Data Science, Yonsei University
✉ jhtkim@yonsei.ac.kr
2. **Jy-yong Sohn**
Associate Professor, Department of Statistics and Data Science, Yonsei University
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3. **Kangwook Lee**
Chief AI Officer, KRAFTON
Chief Technology Officer, Ludo Robotics
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