# Chanwoo Lee


**CONTACT INFORMATION**

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**EDUCATION**

University of Wisconsin-Madison 2018 - Present
*Ph.D. Candidate in Statistics*
*Ph.D. minor in Computer Science*
- Advisor: Miaoyan Wang
- Committee: Stephen Wright (UW-Madison, CS), Kangwook Lee (UW-Madison, ECE), Rebecca Willet (UChicago, Stat), Anru Zhang (Duke, Biostat).

Seoul National University 2012 - 2018
*B.S. in Mathematical Science*
*B.S. in Statistics*
- Summa Cum Laude

**RESEARCH INTERESTS**

Statistical machine learning, matrix/tensor data analysis, network analysis

**PUBLICATIONS**

**C. Lee**, and M. Wang. Smooth tensor estimation with unknown permutations. Under review by *Journal of the American Statistical Association*.
- Part of the work is selected as **Oral Presentation** into *NeurIPS* 2021 Workshop on Quantum Tensor Networks in Machine Learning.

**C. Lee**, L. Li, H. Zhang, and M. Wang. Nonparametric trace regression in high dimensions via sign series representation. Under review by *Annals of Statistics*.

**C. Lee**, and M. Wang. Beyond the Signs: Nonparametric tensor completion via sign series. *Advances in Neural Information Processing Systems 34 (NeurIPS)*, 2021.

J. Hu, **C. Lee** and M. Wang. Generalized Tensor Decomposition with Features on Multiple Modes. *Journal of Computational and Graphical Statistics* :1-15, 2021.
- This work wins **Best Student Paper Award** from the Statistical Computing and Graphics Section of American Statistical Association (ASA), 2021.
- Part of the work is accepted into *NeurIPS* 2020 Second Workshop on Machine Learning and the Physical Sciences.

**C. Lee** and M. Wang. Tensor denoising and completion based on ordinal observation. *Proceedings of International Conference on Machine Learning (ICML),* PMLR 119:5778-5788, 2020.

**TALKS& CONFERENCE PRESENTATIONS**

Smooth tensor estimation with unknown permutation
- at Neural Information Processing Systems 34 (NeurIPS) Workshop on Quantum Tensor Networks in Machine Learning, December 2021
- at Institute for Foundation of Data Science (IFDS) Summer School 2021 poster session, July 2021

Beyond the Signs: Nonparametric tensor completion via sign series
- at Neural Information Processing Systems 34 (NeurIPS), December 2021

Generalized Tensor Decomposition with features on multiple modes
- at Neural Information Processing Systems 33 (NeurIPS) Workshop on Machine Learning and the Physical Sciences, December 2020

Nonparametric learning with matrix-valued predictors in high dimensions
- at Institute for Foundation of Data Science (IFDS) Kickoff 2020 poster session, September 2020

Tensor denoising and completion based on ordinal observations
- at Institute for Foundation of Data Science (IFDS) brown-bag at UW-Madison, March 2020
- at International Conference on Machine Learning (ICML), July 2020
- at Bernoulli-IMS One World Symposium, August 2020

## WORK EXPERIENCE

Summer Research Assistant, Institude for Foundation of Data Science (IFDS) 2021
Researched hypergraph and hypergraphon estimation.
Faculty supervisors: Miaoyan Wang (UW-Madison, Stat), Kangwook Lee (UW-Madison, ECE), Rebecca Willet (UChicago, Stat).

Undergraduate Research Assistant, Seoul National University 2016 - 2018
Implemented topic modeling algorithm based on Latent Dirichlet Allocation.
Worked on boundary detection and image classification.
Advisor: Byeong U. Park, Myungjoo Kang.

Republic of Korea Air Force 2013 - 2015
Operated aero surveillance technician.

## AWARDS& SCHOLARSHIPS

Dean's List 2015 - 2017

1st prize, NIMS-SKKU Big Data Summer School Project 2016
National Institute for Mathematical Sciences - Sungkyunkwan University

Seoul National University Alumni Scholarship 2016 - 2017
Seoul National University Alumni Association

National Scholarship For Science & Engineering 2012 - 2017
Korea Student Aid Foundation

## COMPUTING

**Software**
- `TensorComplete`: An `R` package for tensor noise reduction and completion. Available on `CRAN`.
- `TraceAssist`: An `R` package for fitting nonparametric matrix trace regression model. Available on `CRAN`.
- `SmoothTensor`: An `R` package for estimating a smooth tensor an unknown permutation. Available on `CRAN`.

**Languages**
- `R, Python, Matlab`

## PROFESSIONAL SERVICE

**Reviewer for*** IEEE Transactions on Information Theory (1), International Conference of Machine Learning (5), Neural Information Processing Systems (1), Electronic Journal of Statistics (1), Journal of Machine Learning Research (1), Journal of the American Statistical Association (2), Biometrics (1), Journal of the Royal Statistical Society: Series B (1).

*Numbers in parenthesis indicate the number of papers reviewed