TAKUYA KORIYAMA

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Education.

- 2024-present: PhD student in Econometrics and Statistics, the University of Chicago, Booth School of Business. Advisor: Tengyuan Liang.
- 2022-2024 PhD student in Statistics, Rutgers University. Advisor: Pierre C. Bellec.
- 2018-2022: BE in Mathematical Engineering, the University of Tokyo.

Research Interests. (Google Scholar)

- Mean-filed high-dimensional statistics
- Optimal transport and its application to generative model
- Training dynamics of modern machine learning models
- Combinatorial stochastic processes

Preprint.

(1) Asymptotic Inference for Exchangeable Gibbs Partition
Takuya Koriyama
arXiv:2506.21527, 2025, submitted.

(2) Denoising Diffusions with Optimal Transport: Localization, Curvature, and Multi-Scale Complexity
Tengyuan Liang, Kulunu Dharmakeerthi, and Takuya Koriyama
arXiv:2411.01629, 2024, submitted.

(3) Precise Asymptotics of Bagging Regularized M-estimators
Takuya Koriyama, Pratik Patil, Jin-Hong Du, Kai Tan, and Pierre C. Bellec
arXiv:2409.15252, 2024, major revision at ***Annals of Statistics.***

(4) Asymptotics of resampling without replacement in robust and logistic regression
Pierre C. Bellec and Takuya Koriyama (alphabetical)
arXiv:2404.02070, 2024, major revision at ***Bernoulli.***

(5) Existence of solutions to the nonlinear equations characterizing the precise error of M-estimators
Pierre C. Bellec and Takuya Koriyama (alphabetical)
arXiv:2312.13254, 2023, submitted.

Publication.

(1) Asymptotic mixed normality of maximum likelihood estimator for Ewens–Pitman partition
Takuya Koriyama, Takeru Matsuda and Fumiyasu Komaki
Advances in Applied Probability*, Published online 2025:1-21.*

(2) Phase transitions for the existence of unregularized M-estimators in single index models
Takuya Koriyama and Pierre C. Bellec
Proceedings of the 42nd International Conference on Machine Learning *(ICML 2025).*

(3) Error estimation and adaptive tuning for unregularized robust M-estimator
Pierre C. Bellec and Takuya Koriyama (alphabetical)
Journal of Machine Learning Research *26 (16), 1-40, 2025.*

(4) Corrected generalized cross-validation for finite ensembles of penalized estimators
Pierre C. Bellec, Jin-Hong Du, Takuya Koriyama*, Pratik Patil* and Kai Tan (alphabetical)
Journal of the Royal Statistical Society: Series B*, 87(2), 289-318, 2025.*

(5) Fully Data-driven Normalized and Exponentiated Kernel Density Estimator with Hyvärinen Score
Shunsuke Imai, Takuya Koriyama, Shouto Yonekura, Shonosuke Sugasawa and Yoshihiko Nishiyama
Journal of Business & Economic Statistics *43 (1), 110-121, 2025.*

Date: October 19, 2025.

Award.

- IMS Hannan Graduate Student Travel Award, 2025.
- Travel award, Yale FDS workshop honoring Andrew Barron, 2024.
- Best Ph.D. Qualifying Exam Performance, Department of Statistics, Rutgers University, 2023.
- Student Travel Award, IMS International Conference on Statistics and Data Science, 2022.
- Best Presentation Award, 16th Japan Statistical Society Spring Meeting, 2022.
- Japan Statistical Society Certificate Director's Award, 2022.

Talk.

- Proceedings of the 42nd International Conference on Machine Learning (ICML), Vancouver, July 2025.
- Workshop on Statistical Network Analysis and Beyond (SNAB), Tokyo, June 2025.
- IMS International Conference on Statistics and Data Science, Nice, December 2024.
- Workshop Honoring Andrew Barron: Forty Years at the Interplay of Information Theory, Probability and Statistical Learning, Yale University, April 2024.
- IMS Asia Pacific Rim Meeting, Melbourne, January 2024.
- Seminar talk, Graduate school of Economics, the University of Tokyo, February 2023.
- IMS International Conference on Statistics and Data Science, Florence, December 2022.
- Workshop on random partition of integers, the University of Tokyo, June 2022.
- Japan Statistical Society Meeting, Keio University, March 2022.

Teaching. (PhD level courses)

- TA: Theory of Probability, fall 2023.
- TA: Stochastic process, spring 2024.
- Instructor: Probability and Stochastic Processes, summer 2024.