

Gyeonghun Kang (姜暲勋)

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Research Interests

I study how neural network architectures and their components shape and constrain model capabilities across diverse tasks. I use these insights to guide model design, adaptation, and training. See my [website](#) for a brief overview of my recent work.

Education

Duke University

Ph.D. Candidate in Statistical Science

Advisors: Dr. [Simon Mak](#) and Dr. [Xiang Cheng](#)

Durham, NC

Aug. 2023 – Dec. 2026 (expected)

Yonsei University

M.S. in Statistics and Data Science

Advisor: Dr. [Seonghyun Jeong](#)

Seoul, South Korea

Mar. 2021 – Feb. 2023

Yonsei University

B.A. in Economics; Minor in Applied Statistics

Seoul, South Korea

Mar. 2013 – Feb. 2021

Papers

Selected Work

[†]First author; *equal contribution.

Kang, G.^{†*}, Liu, P.^{*}, Qian, B.^{*}, Cheng, X. (2026), “The Noise-Transmission Burden of Diffusion Network: Why Image Prediction Can Outperform Noise Prediction”.

Kang, G.[†], Chen, W. X., Cheng, X. (2026), “How Do DiTs Denoise? An Aggregator–Predictor View of Attention and MLPs”.

Kang, G.[†], Lee, C., Cheng, X. (2026), “Transformers Can Learn Posterior Predictive Distributions In-Context”. *International Conference on Machine Learning (ICML)*

Other Work

Kang, G.[†], Mak, S., “Bayesian Neural Operators for Uncertainty-Aware Predictions of Expensive Parametric Partial Differential Equations”. *In preparation*

Kang, G.[†], Mao, J., Ma, L. (2026), “Multiscale Cochran–Mantel–Haenszel Scanning for Conditional Dependency”.

Kang, G.[†], Jeong, S. (2026), “Model Selection-Based Estimation for Generalized Additive Models Using Mixtures of g -Priors”. *Bayesian Analysis*. First published online in 2024.

2022 Brain Korea Excellent Paper Award; 2022 KSS Honorable Mention Poster Award

Honors & Awards

- 2026 Silver Reviewer Award, *International Conference on Machine Learning (ICML)*
- 2022 Honorable Mention Poster Award, *Korean Statistical Society Conference*
- 2022 Excellent Paper Award, *Brain Korea Academic Conference*
- 2021–22 Brain Korea 21 Scholarship, *National Research Foundation of Korea*
- 2021 Academic Research Fellowship, *Yonsei University*

Presentations

Posters

- 2026. Transformers Can Learn Posterior Predictive Distributions In-Context. *International Conference on Machine Learning (ICML)*, Seoul, South Korea
- 2022. Model Selection-Based Estimation for Generalized Additive Models Using Mixtures of g-Priors. *Korean Statistical Society Conference*, Jeju, South Korea

Talks

- 2026. Multiscale Cochran–Mantel–Haenszel Test for Conditional Dependency. *Department of Statistical Science*, Durham, NC.
- 2022. Model Selection-Based Estimation for Generalized Additive Models Using Mixtures of g-Priors. *Korea Data Mining Society Conference*, Busan, South Korea.

Teaching Experience

- 2026 Teaching Assistant, STA 561: Probabilistic Machine Learning, *Duke University*
- 2025 Teaching Assistant, STA 610: Multilevel and Hierarchical Models, *Duke University*
- 2025 Teaching Assistant, STA 332: Theory of Inference, *Duke University*
- 2024 Teaching Assistant, STA 310: Generalized Linear Models, *Duke University*
- 2021–22 Teaching Assistant, STA 3127: Statistical Computing, *Yonsei University*

Academic Service

Reviewer: ICML, NeurIPS, ICLR, and AAAI (2026).

Languages

Korean (native); English (fluent); Mandarin Chinese (conversational; currently studying).