

Dohyeong Ki

Statistics Ph.D. Candidate

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Education

Ph.D. in Statistics, University of California, Berkeley Expected 2026

- Advisor: Adityanand Guntuboyina

B.S. in Mathematics, *Summa Cum Laude*, Seoul National University 2020

Papers & Preprints

[1] **Ki, D.** and Guntuboyina, A. (2026+) What functions does XGBoost learn? Submitted. Available at <https://arxiv.org/abs/2601.05444>.

[2] **Ki, D.** and Guntuboyina, A. (2026) Totally concave regression. *Journal of the American Statistical Association*, accepted for publication. Available at <https://arxiv.org/abs/2501.04360>.

[3] **Ki, D.**, Fang, B., and Guntuboyina, A. (2024) MARS via LASSO. *Annals of Statistics* 52(3), 1102-1126.

[4] **Ki, D.** and Park, B. U. (2021) Intrinsic Hölder classes of density functions on Riemannian manifolds and lower bounds to convergence rates, *Statistics & Probability Letters* 169, 108959.

Work in Progress

[1] Nearly log-concave density estimation. With Arlene K. H. Kim and Adityanand Guntuboyina.

Software

[1] **regmdc**: R package for fitting nonparametric regression models with mixed derivative constraints (on [GitHub](#)). Available methods include MARS via LASSO and totally concave regression.

Talks

What Functions Does XGBoost Learn?

- International Conference on Statistics and Data Science (ICSIDS), Seville, Spain, Dec. 2025.

Totally Concave Regression

- Joint Statistical Meetings (JSM), Nashville, TN, USA, Aug. 2025.
- Bernoulli-IMS 11th World Congress in Probability and Statistics, Bochum, Germany, Aug. 2024.
- CAMSE-CLIMB Mini-Conference ([CAMSE-CLIMB](#)), Berkeley, CA, USA, Apr. 2024.

MARS via LASSO

- International Indian Statistical Association Conference (IISA), Denver, CO, USA, Jun. 2023.
- Joint Statistical Meetings (JSM), Washington, D.C., USA, Aug. 2022.
- San Francisco Bay Area Chapter of the American Statistical Association ([SFASA](#)), Online, Jun. 2022.

Poster Presentations

What Functions Does XGBoost Learn?

- 1st International New Researchers Conference (INRC), Seville, Spain, Dec. 2025.
- Berkeley Statistics Annual Research Symposium (BSTARS), Berkeley, CA, USA, Sep. 2025.

Totally Concave Regression

- Berkeley Statistics Annual Research Symposium (BSTARS), Berkeley, CA, USA, Apr. 2024.

Awards

ICSDS Student Travel Award , Institute of Mathematical Statistics	2025
KISS Outstanding Student Paper Award , Korean International Statistical Society	2025
IMS Hannan Graduate Student Travel Award , Institute of Mathematical Statistics	2024
IISA Student Paper Award , International Indian Statistical Association	2023
Outstanding GSI Award , Graduate Division, University of California, Berkeley	2023
SFASA Student Travel Award , San Francisco Bay Area Chapter of the ASA	2022
Overseas Ph.D. Scholarship , Korea Foundation for Advanced Studies (KFAS)	2020 – 2025
Gold Medal , University Students Contest of Mathematics, Korean Mathematical Society	2016, 2018, 2019
Outstanding Tutor Award , Faculty of Liberal Education, Seoul National University	2018
Presidential Science Scholarship , Korea Student Aid Foundation (KOSAF)	2013 – 2019

Teaching

University of California, Berkeley

Graduate Student Instructor (GSI)

Stat 153/248: Introduction to Time Series/ Analysis of Time Series	Spring 2025, Fall 2025
Stat 210A: Theoretical Statistics	Fall 2021, Fall 2024
Stat 151A: Linear Modelling: Theory and Applications	Spring 2024
Stat 2: Introduction to Statistics	Fall 2023
Stat 201A: Introduction to Probability at an Advanced Level	Fall 2022
Stat 134: Concepts of Probability	Spring 2022

Seoul National University

Undergraduate Tutor

Calculus for Humanities and Social Sciences 2	Fall 2018
Differential and Integral Calculus 1	Spring 2018
Calculus 2	Fall 2017

Seoul National University Children's Hospital School

<i>Mathematics Teacher</i>	2017 – 2020
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Professional Services

Reviewing Service: Annals of Statistics; Biometrika

Organizational Activities

UC Berkeley Statistics Student Seminar (Head Organizer)	2024 –
UC Berkeley Statistics Undergraduate Mentorship Program	2023 – 2024

Mentoring

UC Berkeley Statistics Undergraduate Mentorship Program

2023 –

UC Berkeley Statistics Ph.D. Mentorship Program

2021 – 2023