

# Dohyeong Ki

Statistics Ph.D. Candidate

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## Education

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**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

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[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

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

## Software

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[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

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### What Functions Does XGBoost Learn?

- International Conference on Statistics and Data Science (ICSDS), 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

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### 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

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

## Teaching

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### 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

#### *Mathematics Teacher*

	2017 – 2020
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## Professional Services

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**Reviewing Service:** Annals of Statistics; Biometrika

## Organizational Activities

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<b>UC Berkeley Statistics Student Seminar</b> (Head Organizer)	2024 –
<b>UC Berkeley Statistics Undergraduate Mentorship Program</b>	2023 – 2024

## **Mentoring**

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**UC Berkeley Statistics Undergraduate Mentorship Program**  
**UC Berkeley Statistics Ph.D. Mentorship Program**

2023 –  
2021 – 2023