Junhyoung Chung

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Education

Seoul National University, M.S. in Statistics 2024.03 – 2026.02 (expected)
- Advisor: Gunwoong Park

Seoul National University, B.S. & B.A. in Statistics & Economics (double major) 2018.03 – 2024.02
- *Summa cum laude*
- Completed mandatory military service in South Korea (2019.09 – 2021.04).

∗ indicates the first author, and † indicates the authors who contributed equally.

In-press

Prediction of high-risk mountain accident areas using a Hurdle model (*Written in Korean*) Accepted in 2025.05
Junhyoung Chung∗, Sungjin Lee, Gunwoong Park
TBA in *Korean Journal of Applied Statistics*

Publications

Discovering causal structures in corrupted data: Frugality in anchored Gaussian DAG models 2025.08
Joonho Shin†, ***Junhyoung Chung***†, Seyong Hwang†, Gunwoong Park†
In *Computational Statistics and Data Analysis, 213*, 108267, *10.1016/j.csda.2025.108267*

Learning distribution-free anchored linear structural equation models in the presence of measurement error 2024.12
Junhyoung Chung∗, Youngmin Ahn, Donguk Shin, Gunwoong Park
In *Journal of the Korean Statistical Society*, 1-25, *10.1007/s42952-024-00298-9*
- A summary of this study can be found at *my website*.

Horse race rank prediction using learning-to-rank approaches (*Written in Korean*) 2024.04
Junhyoung Chung∗, Donguk Shin, Seyong Hwang, Gunwoong Park
In *Korean Journal of Applied Statistics, 37*(2), 239-253, *10.5351/KJAS.2024.37.2.239*
- A summary of this study can be found at *my website*.

Projects

Korean National Fire Agency, The central administrative agency of South Korea responsible for firefighting affairs 2024.08 – 2024.12
- Developed a grid-based prediction model for mountain accidents using a Hurdle model.
- Improved F1 score by 20 percentage points for binary classification compared to the baseline model.

Healing Paper, Online cosmetic surgery matchmaking platform in South Korea 2022.09 – 2022.12
- Developed a classification framework for advertisement images by extracting key information with NLP and computer vision.
- Designed data-driven marketing strategies to effectively promote surgical services based on the framework.

Loadcomplete, Mobile game studio in South Korea 2022.07 – 2022.08
- Built churn & LTV prediction models via daily play-pattern clustering.
- Estimated user retention by modeling with rational functions and shifted Beta-Geometric (sBG) models.

LaundryGo, On-demand laundry service platform in South Korea 2022.03 – 2022.06

- Analyzed pricing plans and derived subscription recommendations based on user behavior patterns.
- Designed a new pricing plan based on the analysis, which was successfully adopted and implemented.

Research Experience

Data Science & Machine Learning Lab., Seoul National University 2023.06 – present

- Graphical models
  - Developed consistent algorithms to discover latent DAG structures with contaminated data.
  - Extended nonparanormal graphical models to accommodate symmetric distributions by introducing convex ordering.
- Optimal transport
  - Proposed statistical algorithms to efficiently estimate continuous Brenier maps for optimal transport using Gaussian approximation.
- Applications
  - Integrated a grid-based spatial model and a Hurdle model to predict mountain accidents.
  - Introduced learning-to-rank approaches to predict rankings in horse racing.

Teaching

Leading Teaching Assistant, Core Computing: Thinking with Computers Fall 2024, Fall 2025

Supporting Teaching Assistant, Statistics Fall 2025

Supporting Teaching Assistant, Statistics Lab. Spring 2024

Supporting Teaching Assistant, Basic Computing: First Adventures in Computing Spring, Fall 2023

Talks

Learning distribution-free anchored linear structural equation models in the presence of measurement error 2025.06

- Presented at *Korean Statistical Society Conference*.

Discovering causal structures in privacy-protected and noisy data: Frugality in anchored Gaussian DAG models 2024.11

- Presented at *Korea-Japan Joint Symposium of Statistics and Data Science*.

Learning distribution-free anchored linear structural equation models in the presence of measurement error 2024.07

- Presented at *Joint International Seminar in Collaboration with Kyushu University*.

Awards and Honors

Presidential Science Scholarship, *Korea Student Aid Foundation* (Field: Math) 2025.03 – present

- Awarded by the President of South Korea to outstanding graduate students in science and engineering.
- Received a monthly living stipend of ∼$1,500 for one year.

Research Scholarship, Basic Science Research Program, *National Research Foundation of Korea* 2024.09 – 2025.09

- Received a monthly research fellowship of ∼$1,000 for one year.

3rd Prize, Online Overseas Volunteer Program Contest, *Korean University Council for Social Service* 2022.03

Undergraduate Scholarship, *Ilju Scholarship Foundation* 2018.09 – 2024.02

- Received full tuition scholarship for 7 semesters.

Extracurricular Activities

Tennis Club, Seoul National University 2021.09 – present

Growth Hackers, Business School, Seoul National University 2022.03 – 2022.12

- Participated in 3 real-world data projects with corporate clients, each securing ∼$2,500 in funding.

Global SNU Social Responsibility Corps, Seoul National University 2021.06 – 2021.08

- Joined an online voluteer program in Laos, serving as a VR team leader to produce VR contents for smart farming and heat illness prevention.

Skills

- **Programming:** Python, R, LaTex
- **Language:** Korean (native), English (fluent), Japanese (conversant)

English Proficiency Scores

- **MyBest TOEFL score (Total 108/120)**: Reading 30/30, Listening 28/30, Speaking 23/30, Writing 27/30
- **MyBest GRE score (Total 332/340)**: Verbal 162/170, Quant 170/170, Analytical Writing 4.0/6.0