Junhyoung **Chung**

Curriculum Vitae

About me

This is about me

personal

Junhyoung Chung
nationality: Korean
1999.07.22

Areas of specialization

Statistics
Machine Learning
Bayesian Networks
Directed Acyclic Graph

Interests

Estimation of DAG with measurement error
Causal Clustering

Contact

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Education

2024 ~ present **M.S. (Advisor: Gunwoong Park)**
Statistics · Seoul National University

2018 ~ 2023 **B.S. & B.A. (*Summa cum laude*)**
Statistics & Economics · Seoul National University

Programming

LaTeX
R
python

Publication

2023 **Horse Race Rank Prediction Using Learning-to-Rank Approaches**
Junyhoung Chung ∗ · Donguk Shin · Seyong Hwang · Gunwoong Park
The Korean Journal of Applied Statistics, 37, 239-253.
This is my first paper written during the undergraduate studies. This paper utilizes various Learning-to-Rank approaches at horse race rank prediction. The main contributions of this paper are: i) applying LTR approaches to sports, which have been only widely used in recommendation system, ii) enhancing the prediction performance compared to the previous research, and iii) establishing interpretability of the proposed model by Shapley values.

On-going Works

2024 **Learning Distribution-Free Anchored Linear Structural Equation Models in the Presence of Measurement Error**
Junhyoung Chung ∗ · Youngmin Ahn · Donguk Shin · Gunwoong Park
Journal of the Korean Statistical Society (under revision)
This paper proposes a new identifiability condition for Markov equivalence class and provides a distribution-free algorithm to capture the latent true graph in the presence of measurement error. It also ensures time efficiency as it estimates the true graph by inverse covariance matrix.

2024 **Discovering Causal Structures in Privacy-Protected and Noisy Data: Frugality in Anchored Gaussian DAG Models**
Joonho Shin † · Junhyoung Chung † · Seyong Hwang † · Gunwoong Park †
Computational Statistics and Data Analysis (under review)
This paper considers a Gaussian DAG model in the presence of measurement error with unknown variances. Specifically, the model achieves its identifiability under our novel condition called anchored-frugality. This condition is based on the fact that the graph induced by contaminated data is denser than its true graph in general.

∗ denotes the first author, and † denotes the authors that are equally contributed.

Awards & Honors

2021 3rd Prize, Online overseas volunteer program contest (Korean university council for social service)

2019 – 2021 Sergeant, Republic of Korea's Army

Languages

Korean	mother tongue
English	
Japanese	
Spanish	

Talks

Nov. 2024 "Discovering Causal Structures in Privacy-Protected and Noisy Data: Frugality in Anchored Gaussian DAG Models", at: *Korea-Japan joint symposium* of Statistics and Data Science.

Jul. 2024 "Learning Distribution-Free Anchored Linear Structural Equation Models in the Presence of Measurement Error", at: *Joint international seminar* in collaboration with Kyushu University.