Taehyeon Koo

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https://taehyeonkoo.github.io/

EDUCATION	*Doctor of Philosophy*, Statistics	2020 - Present
	Advisors: Prof. Zijian Guo and Prof. Nicole E. Pashley	
	Thesis: Causal Inference with Model- and Design-based Perspectives	
	Rutgers University, New Brunswick, NJ	
	Master of Science, Statistics	2020
	Advisor: Prof. Johan Lim	
	Thesis: An Invariant Test for Equality of Two Large Scale Covariance Matrices	
	Seoul National University, South Korea	
	Bachelor of Science, Mathematical Science	2018
	Seoul National University, South Korea	

RESEARCH INTERESTS
Causal Inference in Experiments and Observational Studies, Synthetic Control, Incomplete Block Designs, Instrumental Variables Methods.

HONORS AND AWARDS
Best Ph.D. Qualifying Exam Performance — 2021
Department of Statistics, Rutgers University

PUBLICATIONS
Koo, T., Lee, Y., Small, D.S., & Guo, Z. (2023). RobustIV and controlfunctionIV: Causal Inference for Linear and Nonlinear Models with Invalid Instrumental Variables. Observational Studies 9(4), 97-120. https://doi.org/10.1353/obs.2023.a906625.

PREPRINTS
Koo, T., & Pashley, N.E. (2024). Design-based Causal Inference for Balanced Incomplete Block Designs. *arXiv preprint arXiv:2405.19312.*

Koo, T., Cho, S., & Lim, J. (2019). An Invariant Test for Equality of Two Large Scale Covariance Matrices. *arXiv preprint arXiv:1911.06006.*

SOFTWARE
R Packages
`RobustIV`: A package for the inference with a possibly invalid instrumental variable in the linear model. https://CRAN.R-project.org/package=RobustIV
`controlfunctionIV`: A package for the inference using the control function method in the nonlinear model. https://CRAN.R-project.org/package=controlfunctionIV

TEACHING EXPERIENCE
Instructor at Rutgers University
Review of STAT 593 and 594 for Ph.D. Qualifying Exam — Summer 2022

Teaching Assistant at Rutgers University

STAT 486: Applied Statistical Learning	Fall 2024
STAT 490: Introduction to Experimental Design	Spring 2024
STAT 467: Applied Multivariate Analysis	Spring 2023

	STAT 594: Advanced Modern Statistical Inference II	Spring 2022
	STAT 593: Theory of Statistics	Fall 2021

Teaching Assistant at Seoul National University

326.311: Mathematical Statistics I	Summer 2019
033.019: Introduction to Statistics	Fall 2018

APPLIED EXPERIENCE	*Statistical Consultant*	Fall 2019
	Statistical Research Institute, Seoul National University	

HKUST-SNU Summer Research Program
in Industrial and Applied Mathematics (SPIA)   Summer 2017
- Financial Market Forecasting with Text Mining

Engineer, Sergeant   May 2013 - Feb 2015
Republic of Korea Army

PRESENTATION   *Poster Presentation at Conference on Recent Advances in Statistics and Data Science at Rutgers University, May 11, 2023,* on "Analysis of Incomplete Block Designs with the Potential Outcomes Framework".

REFERENCES

Zijian Guo
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Dylan Small
Department of Statistics
The Wharton School, University of Pennsylvania
Philadelphia, PA 19104
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