

# HYUKJUN KWON

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## EMPLOYMENT

Postdoctoral Research Associate, ORFE, Princeton University Aug 2024 -

## EDUCATION

### Rutgers University, USA

Ph.D. in Economics Oct 2024

### Pennsylvania State University, USA

M.A. in Economics 2018

### Seoul National University, Korea

M.A. in Economics 2016

### Republic of Korea Naval Academy, Korea

B.E. and B.A in Military 2009

## RESEARCH INTERESTS

High-dimensional Models, Factor Analysis, Causal Inference

## WORKING PAPERS

Inference for Low-rank Models without Estimating the Rank (with Jungjun Choi, Yuan Liao)

**Abstract:** This paper studies the inference about linear functionals of high-dimensional low-rank matrices. While most existing inference methods would require consistent estimation of the true rank, our procedure is robust to rank misspecification, making it a promising approach in applications where rank estimation can be unreliable. We estimate the low-rank spaces using pre-specified weighting matrices, known as diversified projections. A novel statistical insight is that, unlike the usual statistical wisdom that overfitting mainly introduces additional variances, the over-estimated low-rank space also gives rise to a non-negligible bias due to an implicit ridge-type regularization. We develop a new inference procedure and show that the central limit theorem holds as long as the pre-specified rank is no smaller than the true rank. Empirically, we apply our method to the U.S. federal grants allocation data and test the existence of pork-barrel politics.

**Reject and Resubmit at *Journal of the American Statistical Association***

Inference for Low-rank Completion without Sample Splitting with Application to Treatment Effect Estimation (with Jungjun Choi, Yuan Liao)

*Journal of Econometrics* 240 (1)

Justified-envy-minimal Efficient Mechanisms for Priority-based Matching (with Ran Shorrer)

R&R at *Games and Economic Behavior*

## TEACHING EXPERIENCE

Instructor, Rutgers University

- Econ Data Science, Advanced Analysis for Economics (co-teaching with Prof. Yuan Liao)      Spring 2023

- Econometrics      Summer 2022

- Math Camp for Incoming Econ Graduate Students      Summer 2022, Summer 2021

Teaching Assistant (graduate courses), Rutgers University      2019 – 2022

Econometrics (x4), Macroeconomics (x1)

Teaching Assistant (undergraduate courses), Rutgers University      2019 – 2022

Forecasting and Big Data (x2), Introduction to Econometrics (x2), Econ Data Science (x1), Women, Men, and Economy (x1), Financial Economics (x1), Energy Economics (x1)

## HONORS AND AWARDS

Dorothy Rinaldi Award, Rutgers University      2023

*In recognition of outstanding scholarship, leadership, and service to other graduate students*

Sidney I. Simon Prize for Outstanding Graduate Student Teaching, Rutgers University      2023

*In recognition of outstanding teaching by a graduate student*

Professor Hiroki Tsurumi Graduate Dissertation Fund in Economics, Rutgers University      2022

*In recognition of exceptional dissertation research by advanced graduate students*

Sidney I. Simon Award, Rutgers University      2021

*In recognition of outstanding second year research paper*

Rie Ashizawa Memorial Award, Rutgers University      2019

*In recognition of outstanding performance on the qualifying examinations*

## PRESENTATIONS

KAEA Job Market Conference      Nov 2023

Econometrics Seminar, University of Connecticut      Oct 2023

Midwest Econometrics Group (MEG) Conference      Oct 2023

International Conference on Computational Statistics (COMPSTAT)      Aug 2023

International Conference on Econometrics and Statistics (EcoSta)      Aug 2023

## REVIEWING ACTIVITIES

International Journal of Game Theory, ACM EC

## SKILLS AND PERSONAL

Programs: Matlab, Julia, Python, L<sup>A</sup>T<sub>E</sub>X

Languages: English (fluent), Korean (native)

Military Service: Lieutenant, Republic of Korea Navy      2009 – 2014

*Last Updated: August 2024*