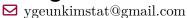
Young Geun Kim



ygeunkim.github.io

github.com/ygeunkim

Education

Mar. 2019 – Feb. 2025 **Ph.D. in Statistics**, Sungkyunkwan University, Seoul.

Dissertation: Bayesian Modeling and Forecasting of High Dimensional Long Range

Dependent Time Series. Advisor: Changryong Baek.

Mar. 2013 – Feb. 2019 **B.Ec. in Statistics**, Sungkyunkwan University, Seoul.

Research Interests

High-dimensional time series High-dimensional time series analysis/forecasting.

Long-range dependence Vector heterogeneous autoregressive (VHAR) model.

Bayesian econometrics Bayesian vector autoregressive (BVAR) models.

Anomaly detection Time series anomaly detection.

Research Publications

Journal Articles

Y. G. Kim and C. Baek, "Bayesian vector heterogeneous autoregressive modeling," *Journal of Statistical Computation and Simulation*, vol. 94, no. 6, pp. 1139–1157, 2024. • DOI: 10.1080/00949655.2023.2281644.

Conference Proceedings

- J.-H. Yun, J. Kim, W.-S. Hwang, **Y. G. Kim**, S. S. Woo, and B.-G. Min, "Residual size is not enough for anomaly detection: Improving detection performance using residual similarity in multivariate time series," in *Proceedings of the 37th ACM/SIGAPP Symposium on Applied Computing*, ser. SAC '22, Virtual Event: Association for Computing Machinery, 2022, pp. 87–96, ISBN: 9781450387132. ODI: 10.1145/3477314.3506990.
- Y. G. Kim, J.-H. Yun, S. Han, H. C. Kim, and S. S. Woo, "Revitalizing self-organizing map: Anomaly detection using forecasting error patterns," in *ICT Systems Security and Privacy Protection*, A. Jøsang, L. Futcher, and J. Hagen, Eds., Cham: Springer International Publishing, Jun. 2021, pp. 382–397, ISBN: 978-3-030-78120-0. Ø DOI: 10.1007/978-3-030-78120-0_25.

Workshops & Posters

J. Cho, S. Tariq, S. Lee, **Y. G. Kim**, J.-H. Yun, J. Kim, H. C. Kim, and S. S. Woo, *Contextual anomaly detection by correlated probability distributions using kullback-leibler divergence*, 5th Workshop on Mining and Learning from Time Series, held in conjunction with KDD'19, Anchorage, Alaska, USA, Aug. 2019.

Our URL: https://milets19.github.io/papers/milets19_poster_6.pdf.

Patents

S. S. Woo and **Y. G. Kim**, "Apparatus and method for detecting outliers in cyber-physical systems," 1 026 080 180 000, Nov. 2023. ODOI: https://doi.org/10.8080/1020220003261.

Research Projects

Jun. 2019 – Feb. 2025 Bayesian approaches to high-dimensional long-range dependent time series

Time series Lab (PI: Changryong Baek), Sungkyunkwan University, Seoul. Developed Bayesian Vector Heterogeneous Autoregressive (BVHAR) models.

Apr. 2019 – Feb. 2020 Anomaly detection in cyber-physical systems National Security Research In-

stitute

DASH Lab (PI: Simon S. Woo), Sungkyunkwan University, Suwon. Developed reconstruction-based anomaly detection algorithm.

Teaching Assistanship

Off-campus

Jul. 2024 – Sep. 2024 Manufacturing solution division data boot-campus Hyundai NGV.

Mentored Hyundai motor group employee's data boot-campus personal

projects.

Aug. 2023 and May. 2024 Time Series Analysis and its Applications The University of Samsung Elec-

tronics.

TA to time series analysis course - included in data science track - for Samsung

Electronics employees. Held PyTorch Lab for time series forecasting.

Nov. 2020 – Dec. 2020 Data Analysis and Modeling 2 SKK GSB AI MBA, Seoul.

TA to Time series analysis course for KB bank employees.

On-campus

Mar. 2020 – Jun. 2020 Recent Advances in Applied Statistics (STA5037) Statistics, Sungkyunkwan

University, Seoul.

Introduction to Time Series Analysis (STA3001) Statistics, Sungkyunkwan

University, Seoul.

Insurance Statistics (STA3018) Statistics, Sungkyunkwan University, Seoul.

Sep. 2019 – Dec. 2019 Mathematics for Statistics (STA2008) Statistics, Sungkyunkwan University,

Seoul.

May 2019 – Jun. 2019 Matrix algebra for Statistics (STA2017) Statistics, Sungkyunkwan University,

Seoul.