Young Geun Kim

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Education

Mar. 2019 – · · · ·	**Ph.D. candidate in Statistics**, Sungkyunkwan University, Seoul. Advisor: *Changryong Baek.*
Mar. 2013 – Feb. 2019	**B.Ec. in Statistics**, Sungkyunkwan University, Seoul.

Research Interests

Long-range dependence	Vector heterogeneous autoregressive (VHAR) model.
Bayesian econometrics	Bayesian vector autoregressive (BVAR) models.
Anomaly detection	Time series anomaly detection.
Time series representation learning	Forecasting LRD time series using deep learning.

Research Experience

Jun. 2019 – · · · ·	**Research Assistant** LRD time series Lab, Sungkyunkwan University, Seoul. Researched Bayesian Vector Heterogeneous Autoregressive models.
Apr. 2019 – Feb. 2020	**Part-time RA** Data-driven AI Security HCI Lab, Sungkyunkwan University, Suwon. Participated in the **anomaly detection in Cyber-physical systems** project. Developed anomaly detection algorithm.

Teaching Assistantship

Aug. 2023	**Time Series Analysis and its Applications** The University of Samsung Electronics. 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** Statistics, SKK GSB AI MBA, Seoul. TA to Time series analysis course for KB bank employees.
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.

Research Publications

Journal Articles

1. **Y. G. Kim** and C. Baek, "Bayesian vector heterogeneous autoregressive modeling," *Journal of Statistical Computation and Simulation*, 2023. DOI: 10.1080/00949655.2023.2281644.

Conference Proceedings

1. 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. DOI: 10.1145/3477314.3506990.
2. **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. DOI: 10.1007/978-3-030-78120-0_25.
3. J. Cho, S. Tariq, S. Lee, *et al.*, "Contextual anomaly detection by correlated probability distributions using kullback-leibler divergence," in *5th Workshop on Mining and Learning from Time Series, held in conjunction with KDD'19*, Anchorage, Alaska, USA, Aug. 2019.

Presentations

- Revitalizing self-organizing map: Anomaly detection using forecasting error patterns
  - IFIP SEC 2021 (Virtual), June 2021
  - Session 11: Machine Learning for Security

Skills

Coding	R, Python, LaTeX, …

Grants and Awards

2019 – 2021	**Graduate Merit Scholarship**, Sungkyunkwan University.
2018	**Masters and Doctors Connected Track Scholarship**, Sungkyunkwan University.
2014 – Spring 2015	**Dean's List**, Sungkyunkwan University.
Spring 2015	**Jinggeomdari Scholarship Track C**, Sungkyunkwan University.
Fall 2013, 2017	**Academic Excellence Scholarship**, Sungkyunkwan University.