

JIWON JUNG

(she/her/hers)

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RESEARCH INTERESTS

Data-driven methods in quantitative finance, insurance, and industry: market microstructure, high-frequency data, lead-lag trading strategy and health transition modeling

EDUCATION

Ph.D. in Statistics Jan. 2021 - Present
Purdue University at West Lafayette, Indiana (*Degree anticipated: May 2025*)
— Thesis: “Dynamics of Modern Financial Markets: Data-Driven Approaches” (in progress)
— (Co-)Advisor: Prof. Kiseop Lee and Prof. Mengyi Xu

M.S. in Statistics Mar. 2017 - Feb. 2019
Seoul National University at Seoul, Korea
— Thesis: “SportLight: Statistically Principled Crowdsourcing Method for Sports Highlight Selection”
— Advisor: Prof. Joong-ho Won (Computational Statistics Lab.)

B.S. in Statistics and B.A. in Economics, *cum laude* Mar. 2013 - Feb. 2017
Seoul National University at Seoul, Korea
— Double degree conferred from College of Liberal Studies Dept.
— Advisor: Prof. Dayk Jang

PROFESSIONAL EXPERIENCE

VivityAI Fall 2022 - Present
Data Analyst — Seoul, Korea (remote)
Develop AI predictive models to improve the quality of smart factory manufacturing system of Shilla corporation (academia-industry collaboration) —Supervisor: Prof. Kiseop Lee

Asan Medical Center 2019 - 2020
Research Assistant — Seoul, Korea
Proposed efficient deep learning algorithms for classification and segmentation tasks in pathology image analysis —Supervisor: Prof. Chan-sik Park and Prof. Jin Roh

LG CNS Winter 2018
Smart Factory Intern — Seoul, Korea
Analyzed LG Innotek battery production data to address a defect identification problem under class imbalance during Smart IT internship in AI&Big Data department.

PUBLICATIONS

1. **Jung, J.**, Lee, K., and Xu, M. (2024). Modeling multi-state health transitions with self-exciting processes. (*Under Review: preprint available at SSRN 4679916.*)

2. Ho, D. J., Chui, M. H., Vanderbilt, C. M., **Jung, J.**, Robson, M. E., Park, C. S., and Fuchs, T. J. (2023). Deep Interactive Learning-based ovarian cancer segmentation of H&E-stained whole slide images to study morphological patterns of BRCA mutation. *Journal of Pathology Informatics* 14, 100160.
3. **Jung, J.**, Ha, S., Son, W., Lee, J., and Won, J. H. (2022). SportLight: statistically principled crowdsourcing method for sports highlight selection. *Journal of the Korean Statistical Society*, 51 (1), 127-148
4. Shin, S. J., You, S. C., Jeon, H., **Jung, J. W.**, An, M. H., Park, R. W., and Roh, J. (2021). Style transfer strategy for developing a generalizable deep learning application in digital pathology. *Computer Methods and Programs in Biomedicine*, 198, 105815.
5. Kim, S. W., Roh, J., **Jung, J.**, Pak, H. K., Lee, A. N., Park, Y. S., and Park, C. S. (2020). Immune checkpoint molecule V-set Ig domain-containing 4 (VSIG4) expression is associated with poor prognosis in advanced gastric cancer patients. *The Journal of Immunology*, 204, 243.4-243.4
6. Roh, J., **Jung, J.**, Lee, Y., Kim, S. W., Pak, H. K., Lee, A., and Park, C. S. (2020). Risk Stratification Using multivariable fractional polynomials in diffuse large B-cell lymphoma. *Frontiers in oncology*, 10, 329.

TEACHING & ADVISING

Instructor

Statistics Dept., Purdue University

- STAT 301: Elementary Statistical Methods Spring 2023 - Present
Responsible for course instruction, class management, and assessment
Taught 2 sections, 60 undergraduate students per section

Teaching Assistant

Statistics Dept., Purdue University

- STAT 303: Probability & Statistics for Business Fall 2021 - Spring 2022
- STAT 511: Statistical Methods Spring 2021
- STAT 512: Applied Regression Analysis Spring 2021

College of Liberal Studies Dept., Seoul National University

- Selected Topics Seminar 2: Information Theory Fall 2018
- Selected Topics Seminar 1: Knowledge Spring 2017

Statistics Dept., Seoul National University

- Statistics Fall 2017
- Science Camp for High school Students in College of Natural Science Summer 2017
- Big Data Special Course using R Jan. 2016

AWARDS & ACTIVITIES

Session Organizer

- “Data-Driven Methods in Financial Markets”, JSM 2024, Portland, Oregon August 2024

Academic Honors

- 4th place, Graduate Student Presentation Award, Korean Statistical Society July 2022
- Graduate Student Instructor scholarship, Seoul National University Fall 2018

Academic Scholarship for Excellent Students
— Statistics Dept., Seoul National University Fall 2018
— College of Liberal Studies Dept., Seoul National University Fall 2013-Spring 2014

Travel Grants

CEPAR 2023 July 2023
Society for Industrial and Applied Mathematics (SIAM) June 2023
Graduate Women in Science Program, Purdue University Fall 2022
Emily and Paul Kidwell Graduate Student Excellent Award, Purdue University Spring 2022

CONFERENCE PRESENTATIONS

1. **Jung, J.**, Lee, K. (2023). Attention-Based Reading, Highlighting, and Forecasting of the Limit Order Book. *Invited talk at 2023 SKKU-KAFE conference*, virtual
2. **Jung, J.**, Lee, K., and Xu, M. (2023). Modeling Multi-state Health Transitions with Hawkes Processes. *Invited talk at INFORMS 2023*, Phoenix, AZ, U.S.
3. **Jung, J.**, Lee, K., and Xu, M. (2023). Modeling Multi-state Health Transitions with Hawkes Processes. *CEPAR International Conference*, UNSW, Sydney, Australia
4. **Jung, J.** and Lee, K. (2023). Attention-Based Reading, Highlighting, and Forecasting of the Limit Order Book. *Invited talk at SIAM Financial Mathematics and Engineering 2023*, DoubleTree by Hilton Philadelphia Center City, Philadelphia, PA, U.S.
5. **Jung, J.**, Lee, K., and Xu, M. (2023). Modeling Multi-state Health Transitions with Hawkes Processes. *Invited talk at Ajou University WCU conference*, Ajou University, Suwon, Korea
6. **Jung, J.**, Leung, T., and Lee, K. (2023). A Lead-lag Analysis of Intraday and Overnight Returns. *Invited talk at American Mathematical Society (AMS) Sectional Meeting*, Georgia Institute of Technology, Atlanta, GA, U.S.
7. **Jung, J.**, Lee, K., and Xu, M. (2022). Modeling Functional Disability with Hawkes Process. *Actuarial Research Conference*, Urbana, IL.
8. **Jung, J.**, Lee, K., and Xu, M. (2022). Modeling Functional Disability with Hawkes Process. *Korean Statistical Society Summer Conference*, Seoul, Korea.
9. **Jung, J.**, Roh, J., and Park, C. S. (2021). Abstract PO-079: Fused LASSO application for gastric cancer image segmentation. *Clinical Cancer Research*, 27, PO-079. *American Association of Cancer Research*, virtual.

TECHNICAL SKILLS

Programming languages: Python, R, MATLAB, Julia, C/C++, JAVA
Statistical analysis tools: Excel, SPSS, SAS

LANGUAGES

English (fluent), Korean (native)