Curriculum Vitae (Last updated: 2023.12.01)

Yoon-Bae Jun

Email: yoonbaej@unr.edu
Website: https://junpeea.github.io/

118 Savitt Medical Science, University of Nevada, Reno,
RENO, NV 89557

PROFESSIONAL EXPERIENCE

Assistant Professor	2023-present, Biostatistics Division, School of Public Health, University of Nevada Reno
Postdoc Research Fellow	2021-2023, Department of Statistics, Iowa State University 2021-2021, Department of Statistics, Seoul National University

EDUCATION

Ph.D.	Statistics (2021)	Seoul National University, South Korea
B.S.	Mathematics (2014) Economics (2014) (Double Major)	Yonsei National University, South Korea

RESEARCH INTERESTS

Spatial Statistics, Spatial Epidemiology, Statistical Learning for Spatial data

PUBLICATION

(https://scholar.google.com/citations?user=uM0-oVcAAAAJ&hl=en)

2021 - present

- Chakraborty, S*., Dey, T*., **Jun, Y***., Lim, C. Y*., et al. A Spatiotemporal Analytical Outlook of the Exposure to Air Pollution and COVID-19 Mortality in the USA. *Journal of Agricultural, Biological and Environmental Statistics* 27, 419–439 (2022) (* Contributed equally) https://doi.org/10.1007/s13253-022-00487-1
- **Jun, YB.**, Song, I., Kim, OJ. et al. Impact of limited residential address on health effect analysis of predicted air pollution in a simulation study. *Journal of Exposure Science and Environment Epidemiology* 32, 637–643 (2022). https://doi.org/10.1038/s41370-022-00412-1

- **Jun, Y. B.**, Lim, C.Y. Spatial regression with non-parametric modeling of Fourier coefficients. *Journal of the Korean Statistical Society* 51, 608–631 (2022). https://doi.org/10.1007/s42952-021-00156-y

2018 - 2020

- Choe, SA., Jang, J., Kim, M.J., **Jun, Y. B**. et al. Association between ambient particulate matter concentration and fetal growth restriction stratified by maternal employment. *BMC Pregnancy Childbirth* 19, 246 (2019). https://doi.org/10.1186/s12884-019-2401-9
- S A Choe, **Y B Jun**, W S Lee, T K Yoon, S Y Kim, Association between ambient air pollution and pregnancy rate in women who underwent IVF, *Human Reproduction*, Volume 33, Issue 6, June 2018, Pages 1071–1078, https://doi.org/10.1093/humrep/dey076
- Choe, SA., **Jun, YB.** & Kim, SY. Exposure to air pollution during preconceptional and prenatal periods and risk of hypertensive disorders of pregnancy: a retrospective cohort study in Seoul, Korea. *BMC Pregnancy Childbirth* 18, 340 (2018). https://doi.org/10.1186/s12884-018-1982-z

WORK IN PROGRESS

- **Jun, Y. B.**, Chakraborty, S*., Dey, T*., Lim, C. Y*., R-Software for the Bayesian Spatio-Temporal Zero-Inflated Model Applications, *Paper manuscript in preparation*
- **Jun, Y. B.**, Zhu, Z., Nettleton, D., Random Forest Prediction Intervals for Spatially dependent data, *draft available*
- **Jun, Y. B.**, Lim, C. Y., Kim, K. H., Nonparamteric estimation of autocovariance of a model error in time series, https://doi.org/10.48550/arXiv.2210.07457
- Kim, K.E., **Jun Y.B.**, Lim, C. Y., Bayesian Spatial Clustered Survival Modeling, *Paper manuscript in preparation*
- **Jun, Y. B.**, An Efficient Active Learning Design through Random Forest under Covariate Shift, *Paper manuscript in preparation*
- **Jun, Y. B.**, Wenru, Zhou Y., Zhu, Z., A random-forest-based spatial alignment population density model for the United States, *Paper manuscript in preparation*
- Zhang T., Zhu Z., **Jun Y.B.**, Zhou Y., A spatiotemporal data fusion framework for creating 1-km hourly land surface temperature, *Paper manuscript in preparation*
- Delp, Drew., Welty, Amy., **Jun Y.B.,** Nettleton, D., Beattle, Gwyn. A**.,** Root-associated Bacterial Community Changes Associated with Increasing Plant Stress, *Working in progress*

SOFTWARE/ WEB APPLICATION

(https://github.com/junpeea)

Name	Description	Reference
spRFPI	Random Forest Prediction Interval for Spatially dependent data	https://github.com/junpeea/spRFPI
NSBSR	Bayesian Spatial Regression using Fourier-spectral approaches	https://github.com/junpeea/NSBSR https://doi.org/10.1007/s42952-021-00156-y
COVID-PM-STZINB	We are developing R-package for the unified Bayesian Disease Mapping Software for Spatial Epidemiology. We would like to provide a simple, unified, and publicly available software that can be implemented to various fields of Disease Mapping studies under contemporary Bayesian framework. (Under development)	https://github.com/junpeea/COVID-PM-STZINB https://doi.org/10.1007/s13253-022-00487-1 .
COVID-PM-SHINY	R-Shiny Website based on the work: A spatio-termporal Analytical Outlook of the Expoaure to Air pollution and COVID-19 Mortality in the USA	https://sounakchakraborty.shinyapps.io/covid_final_interface_software_101026

SELECTED FELLOWSHIPS/ AWARDS

Awards

- Korean Statistical Society, SG Graduate Student Presentation Award, with Honors (The grand prize among graduate student presentations) — 2019, 2017

Grant / Fellowships

- UNR 2023 Fiscal Year Budgets, supported by PG22055 SPH Startup, University of Nevada Reno — 2023-CURRENT
- UNR 2023 Fiscal Year Budgets, supported by Program: PG22264 VP Research Start Up, University of Nevada Reno

- Postdoc research associate, Iowa State University of science and technology, supported by AWD-021392-00001: HDR TRIPODS: D4 (Dependable Data-Driven Discovery) 10/01/2019 (version 5) — 2021-2023

PRESENTATION/ POSTER

Paper presentation

- Paper presentation (2023), A Spatiotemporal Analytical Outlook of the Exposure to Air Pollution and COVID-19 Mortality in the USA, *November IBS Journal Club.*

- Paper presentation (2023), A Spatiotemporal Analytical Outlook of the Exposure to Air Pollution and COVID-19 Mortality in the USA, *Webinar in University of Michigan, Medicine*

- Paper presentation (2023), A Spatiotemporal Analytical Outlook of the Exposure to Air Pollution and COVID-19 Mortality in the USA, *Spatial Statistics: Climate and the Environment 2023 Conference, Spatial Statistics, Elsevier*

- Paper presentation (2022), An Efficient Active Learning Design through Random Forest under Covariate, *Fall conference, Center for Survey Statistics & Methodology, Iowa State University*

- Paper presentation (2022), Random Forest Prediction Intervals for Spatially dependent data, *Spring conference, Center for Survey Statistics & Methodology, Iowa State University*

- Paper presentation (2019), Detecting the effect of spatio-temporally correlated covariates under Bayesian spatially clustered Survival modelling, *Fall conference, The Korean Statistical Society*

- Paper presentation (2019), Bayesian Spatial Prediction with Nonparametric Modelling of a Spectral Density, *Spatial Statistics: Towards Spatial Science 2019 Conference, Spatial Statistics, Elsevier*

- Paper presentation (2018), Bayesian Spatial Regression with Nonparametric Modelling of Spectral Densities, *The 5th Institute of Mathematical Statistics Asia Pacific Rim Meeting (IMS-APRM 2018)*

- Paper presentation (2017), Bayesian Spatial Regression with Nonparametric Modelling of Spectral Densities, *Fall conference, The Korean Statistical Society*

Poster

- Poster session (2022), Random Forest Prediction Intervals for Spatially dependent data, *Department of Statistics 75th Anniversary Celebration, Iowa State University*

- Poster session (2022), Nonparametric estimation of the autocovariance of a Gaussian Process model in time series, *Expressing and Exploiting Structure in Modeling, Theory, and Computation with Gaussian Processes, The Institute for Mathematical and Statistical Innovation (IMSI) workshop*

- Poster session (2018), Prediction approaches of particulate matter and other air pollutants in a cohort study of degenerative diseases, *The Korean society of Atmospheric Environment*

- Poster session (2018), Bayesian Spatial Regression with Nonparametric Modelling of Spectral Densities, *The 3rd Eastern Asia Meeting on International Society for Bayesian Statistics (EAC-ISBA 2018)*

- Poster session (2018), The Impact of using Incomplete Address data on estimating the Health effect of PM_{10} on Low Birth Weight in Seoul Korea: A simulation study, *The Korean society of Environmental Health and Toxicology*

- Poster session (2017), Prediction of PM_{10} and Health Effects on Low Birth Weight in Seoul, Korea, *The Korean society of Environmental Health and Toxicology*

TEACHING/WORK EXPERIENCE

University of Nevada, Reno
Instructor for graduates: CHS765, Survival Analysis for Public Health (Fall, 2023)
- Responsibilities: Instruction and Evaluation
- Overall Ranking:

Iowa State University
Instructor for undergraduates: STAT330, Probability and Statistics for Computer Science (Summer, 2022)
- Topics: Basic probability; Random variables and their distributions; Stochastic processes including Markov chains; Basic statistical inference; Introduction to regression.
- Responsibilities: Instruction and Evaluation (Lecture videos were provided from the former instructor)
- Mode: Online
- Overall Ranking: 4.0/5.0

Seoul National University
Statistical Research Institute, Instructor - SAS tutorial (Summer, 2016)
Statistical Research Institute, Statistician - Statistical Consulting (Fall, 2015)
Research Assistant for graduates: Seminar in Recent Development of Applied Statistics (Spring, 2019; Fall, 2015)
Research Assistant for undergraduates: Statistics (Fall, 2016; Fall, 2014; Spring, 2014)

LANGUAGE/TECNICAL SKILLS

Language | Korean (native); English (fluent)

Technical Expertise |
Computing: SAS, R
Composing: R-Markdown, LaTeX, Overleaf
Visualization: R-Shiny
Cloud: Amazon Web Service