Curriculum Vitae (Last updated: 2022.10.15)

Yoon-Bae Jun

Email: yjun@iastate.edu
Website: https://junpeea.github.io/

1212, Snedecor Hall, 2438 Osborn Dr, Ames, IA 50011

EDUCATION

Iowa State University, Department of Statistics — **STATUS**
Postdoc Research Associate
Research Interests: Spatial Statistics, Spatial Epidemiology, Statistical Learning for Spatial data — AUGUST 2021 - CURRENT
Academic advisor: Zhengyuan Zhu; Daniel Nettleton

Seoul National University, Department of Statistics
Postdoc Research Associate — MARCH-JULY 2021
Ph.D. in Statistics — FEBRUARY 2021
Dissertation Title: Bayesian regression using non-parametric modeling of Fourier coefficients and its applications
Academic advisor: Chae Young Lim

Yonsei University, Department of Mathematics
Bachelor of Arts Degree in Mathematics & Bachelor of Arts Degree in Economics (Double Major) — FEBRUARY 2014

PUBLICATION/ WORK IN PROGRESS

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

Published Papers

- 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

- 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

Papers being submitted/reviewed/working in progress

- **Jun, Y. B.**, Zhu, Z., Nettleton, D., Random Forest Prediction Intervals for Spatially dependent data, *(draft available)*
- **Jun, Y. B.**, Zhu, Z., An Efficient Active Learning Design through Random Forest under Covariate Shift, *Paper manuscript in preparation*
- **Jun, Y. B.**, Kim, K. H., Lim, C. Y., Nonparamteric estimation of autocovariance of a model error in time series, *Paper manuscript in preparation*
- **Jun, Y. B.**, Dey, T., R-Software for the Bayesian Spatio-Temporal Zero-Inflated Model Applications, *Paper manuscript in preparation*
- **Jun, Y. B.**, Kim. K. E., Kim, S. Y., Lim, C. Y., Detecting the effect of spatio-temporally correlated covariates under Bayesian spatially clustered survival modelling, *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*
- **Jun, Y. B.**, Dey, T., Lim, C. Y., Disease cluster analysis for diabetes and hypertension using the individual UDAY survey data in India, *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-ZINB	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	https://github.com/junpeea/COVID-PM-ZINB https://doi.org/10.1007/s13253-022-00487-1.

	studies under contemporary Bayesian framework. (Under development)	
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

- 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-CURRENT
- Postdoc research associate, The Basic Research Lab Project, Seoul National University
- Graduate Fellow, Next Generation Training Program for Statistical Sciences, Seoul National University (5295-20160100)
- Ministry of Education of the Republic of Korea / the National Research Foundation of Korea, Dept. of Statistics (326-20160010)
- President Post-Doc Fellow, the National Research Foundation of Korea, Dept. of Public Health (900-20150065) — 2007-2021
- Graduate Fellow, Basic Research Foundation Project, Seoul National University (326-20140010)
- Mirae Asset PARK HYEON JOO Foundation, Scholarships for overseas exchange students, University of California, San Diego
- Science and Engineering Scholarship (4-years), Korea Student Aid Foundation.

PRESENTATION/ POSTER

Paper presentation

- Paper presentation (2023) (to be scheduled), A Spatiotemporal Analytical Outlook of the Exposure to Air Pollution and COVID-19 Mortality in the USA, submitted to *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

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