

Dr. Jiwoong Kim

CONTACT INFORMATION 4202 E. Fowler Ave CMC-324 813-974-7910
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RESEARCH INTERESTS Computational biology, Computational statistics, Goodness-of-fit test, Generalized linear model, Machine learning, Magnetic resonance imaging, Nonparametric estimation, Time series analysis

ACADEMIC APPOINTMENTS

Assistant Professor (January 2022 – Present)
Department of Mathematics and Statistics
University of South Florida

Research Fellow (November 2020 – January 2022)
Department of Computational Mathematics, Science and Engineering
Michigan State University

Research Fellow (March 2019 – August 2019)
Seoul St. Mary's Hospital

Research Fellow (September 2018 – February 2019)
Ajou University Medical Center

Research Fellow (October 2017 – March 2018)
Department of Statistics
Seoul National University

Visiting Assistant Professor (August 2016 – May 2017)
Department of Applied and Computational Mathematics and Statistics
University of Notre Dame

EDUCATION **Michigan State University**, East Lansing, MI (2011–2016)

Ph.D., Statistics (Thesis supervisor: Hira L. Koul, Ph.D.)

University of Minnesota, Minneapolis, MN (2003–2006)
(transferred from **Seoul National University**)

B.S., Economics

PUBLICATIONS **Statistics**

1. Kim, Jiwoong (2018) "A fast algorithm for the coordinate-wise minimum distance estimation." *Journal of Statistical Computation and Simulation*, **88(3)**: 482-497
2. Kim, Jiwoong (2020) "Minimum distance estimation in linear regression model with strong mixing errors." *Communications in Statistics - Theory and Methods*, **49(6)**: 1475-1494
3. Kim, Jiwoong (2020) "Implementation of a goodness-of-fit test through Khmaladze martingale transformation." *Computational Statistics*, **35(4)**: 1993-2017
4. Balakrishna, N., **Kim, J.**, Koul, H. "Lack-of-fit of a parametric AR(1) model in the presence of measurement error." *Statistics & Probability Letters*, DOI:10.1016/j.spl.2020.108872
5. Kim, K., Koul, H., **Kim, J.** "Specification test based on convolution-type distribution function estimates." (*Advances in Econometrics*)

Medical Science & Machine Learning

6. Park, Y., Shin, N., Chung, S., Lim, S., Lee, P., Kee, S., **Kim, J.** (2019) "MRI-visible perivascular spaces in basal ganglia predict cognitive decline in Parkinsons disease." *Movement Disorders*, **34(11)**: 1672–1679
7. Choi, Y., Nam, Y., Lee, Y., **Kim, J.**,..., Jeon, S. "IDH1 mutation prediction using MR-based radiomics in pretreatment glioblastoma: comparison between manual delineation and fully automated deep learning-based approach of tumor segmentation." *European Journal of Radiology*, DOI:10.1016/j.ejrad.2020.109031
8. Choi, Y., Jang, J., **Kim, J.**, Nam, Y., Shin, N., Ahn, K., Jeon, S., Kim, B. (2020) "MRI and Quantitative Magnetic Susceptibility Maps of the Brain after Serial Administration of Gadobutrol: A Longitudinal Follow-up Study." *Radiology*, **297(1)**:143-150
9. Choi, Y., Nam, Y., **Kim, J.**,...,Shin, N. (2020) "MRI-visible dilated perivascular spaces in healthy young adults: A twin heritability study." *Human Brain Mapping*, **41(18)**:5313-5324
10. Lee, Y., Chang, H., Kim, S., Yang, M.,..., **Kim, J.**, Yoon, J., and Ye, Y. (2020) "Psychological distress in patients with anaphylaxis." *Allergy, Asthma, & Immunology Research*, **12(3)**:496-506
11. Ye, Y., Kim, S., Yang, M., Koh, Y., Kang, H., Choi, J.,..., **Kim, J.** (2020) "Health-related utility of EQ-5D in Korean adults with chronic urticaria: mapping from urticaria outcome measures." *Allergy, Asthma, & Immunology Research*, **12(4)**:599-607
12. Bak, Y., Nah, Y.,..., **Kim, J.**, Shin, N. "Neural correlates of empathy for babies in postpartum women: A longitudinal study." (2021) *Human Brain Mapping* **42(10)**:3295-3304
13. Park, KS., Choi, Y., **Kim, J.**, ..., Kim, M. (2021) *Scientific Reports* Prognostic value of MRI-measured tumor thickness in patients with tongue squamous cell carcinoma. 11, 11333.

WORKS IN PROGRESS

1. **Kim, J.**, Yang, J., Wang, J. "Prediction of chromatin interactions and expression quantitative trait loci based on Bayesian approaches."
2. **Kim, J.**, Koul, H. "A fast algorithm for some minimum L_2 distance estimation and their application to image segmentation."
3. Kim, Jiwoong. "A goodness-of-fit test for the Cauchy distribution with unknown location and scale parameters." (*Submitted to Metrika*)
4. **Kim, J.**, Yoon, J., Kim, S., Kim, W., Jeong, G., Lee, H.,..., Ye, Y. "EQ-5D utility in respiratory allergy according to disease control." (*Submitted to World Allergy Organization Journal*)

COMPUTER SKILLS

Operating Systems

- Windows, Linux

Programming Languages

- C/C++, Win32 API, MFC, Visual Basic, JAVA, Python, PyTorch, TensorFlow, SQL, CUDA, Parallel computing

Academic Software

- MATLAB, R, Shiny, STATA, SPSS

PUBLISHED SOFTWARE AND PACKAGES	<p>R-packages</p> <ul style="list-style-type: none"> • Buddle: deep learning for classification, regression, and time series. • KoulMde: minimum distance estimation. • GofKmt: a goodness-of-fit test via Khmaladze martingale transformation. • HMMEsvolver: a solution for the generalized linear mixed model. <p>Stand-alone academic software</p> <ul style="list-style-type: none"> • KanekiGun: Graphic User Interface of MATLAB for time-series analysis. • GameMax: Calculating the Nash equilibrium for various game theory models.
TEACHING EXPERIENCE	<p>University of South Florida</p> <ul style="list-style-type: none"> • STA 4123 - Introduction to Mathematical Statistics Spring 2022 <p>University of Notre Dame</p> <ul style="list-style-type: none"> • ACMS 10145 - Statistics for Business and Economics I Spring 2017 <p>Michigan State University</p> <ul style="list-style-type: none"> • STT 315: Intro Prob & Stat for Business Summer 2015, 2016 • STT 200: Statistical Methods Summer 2013
PRESENTATION	<ul style="list-style-type: none"> • 2020 Statistics Seminar Series, Chonnam University September 2020 • 2020 Statistics Seminar Series, Chungnam University July 2020 • 2020 Statistics Seminar Series, Sungshin Women's University June 2020 • 2020 Statistics Seminar Series, Chonnam University June 2020 • 2020 Statistics Seminar Series, Ajou University May 2020 • 2019 Radiological Society of North America, Chicago December 2019 • 2019 Statistics Seminar Series, Hankuk University of Foreign Studies May 2019 • 2019 KAAACI-KAPARD-WPAS-INTERASMA Joint Congress, Seoul May 2019 • 2019 Statistics Seminar Series, The Catholic University of Korea March 2019 • 2018 AI World Conference & Expo, Boston December 2018 • 2018 Statistics Seminar Series, University of Rhode Island May 2018 • 2017 International Workshop on Computational Mathematics, Ewha Womans University December 2017 • 2017 Statistics Seminar Series, Kangnam University December 2017 • 2017 Statistics Seminar Series, Seoul National University November 2017 • 2016 Statistics Seminar Series, University of Notre Dame November 2016 • 2015 Lloyd Roeling UL Lafayette Mathematics Conference November 2015
AWARDS	<p>Travel Awards – Michigan State Unvierstiy Fall 2015</p> <p>Doug & Jane Gorence Scholarship – University of Minnesota Fall 2004</p>
VOLUNTEERING & DONATION ACTIVITY	<ul style="list-style-type: none"> • Habitat for Humanity Lansing Summer 2015 – December 2019 • UNICEF November 2016 – December 2019 • Good Neighbors November 2017 – December 2019 • Médecins Sans Frontières (Doctors Without Borders) December 2018 – Present • Feeding America December 2020 – Present • St. Jude Children's Research Hospital January 2021 – Present