JONGJIN (JJ) KIM

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PROFESSIONAL SUMMARY

Data Scientist with a Ph.D. in Big Data Analytics and over 5 years of experience in advanced statistical modeling, machine learning, and data-driven problem-solving. Expert in Python, R, and MATLAB with a proven track record in uncertainty quantification, time-series analysis, and Bayesian inference. Successfully led research projects and industry competitions, delivering innovative solutions. Seeking to leverage my expertise to drive impactful results in a dynamic data science role.

KEY SKILLS

Programming Languages: R, Python, MATLAB, SAS
Data Science Tools: R Shiny, R Markdown, GitHub, GitLab, LATEX
Statistics & Data Science Skills: Time Series Analysis, Bayesian Inference, Gaussian Processes, Data Visualization, Big Data Analytics, Theoretical Statistics, Statistical Computing

ACHIEVEMENTS

Winner | NSF Data Science Competition of Algorithms for Threat Detection September **2022**
US National Science Foundation and Pennsylvania State University
Most Accurate Ranking of Event Code Predictability using Kendall Tau

Runner-up | OUC Meter Data Science Competition February 2021
Most Accurate Prediction of Disaggregation of Customer Usage of Electric Vehicles
Award: $1,500

Winner | KAIST Excellent Research Award on Undergraduate Dissertation December 2007
Awarded by Korea Advanced Institute of Science and Technology
Title: Stochastic Modeling of the KAIST Web Board.

Third Place |Nationwide Math Olympiad for Undergraduates November 2006
Awarded by Korean Mathematical Society

Awardee | The President Scholarship, Korea 2004 - 2007
Awarded by Korea Science and Engineering Foundation
National award – ₩40,000,000 (~US$30,000)

PROFESSIONAL POSITIONS

Data Scientist | University of Florida, Orlando, FL
Department of Pharmaceutics, College of Pharmacy, October 2023 - May 2024
Project: A web-based user-friendly graphical user interface (GUI) on Duchenne muscular dystrophy (DMD) disease progression models
Skills required: R, R Shiny, Monolix, Non-linear Mixed Effect Model

Research Assistant | University of Central Florida, Orlando, FL
Department of Statistics and Data Science

Project 1: Simulate Uncertainty Quantification in Digital Twins May 2023 - August 2023
Roles: Building a theoretical framework for Bayesian inference, finding a posterior distribution of parameters & running a polynomial chaos expansion model.

Skills required: R, Uncertainty Quantification, Bayesian Inference, Polynomial Chaos Expansion, Gaussian Process

Project 2: Algorithms for threat detection 2022 competition May 2022 - August 2022
Roles: Multiple time series forecasting of political events, doing an exploratory analysis and a feature engineering in clustering, building a Poisson Regression model for the temporal-spatial events
Skills required*:* Python, Time Series Analysis, Gitlab, Poisson Regression

Project 3: Reconstructing a time-of-flight PET image May 2022 - August 2022
Roles: Reconstruct a PET image on the time-of-flight distribution, running an optimization algorithm to estimate parameters of time-of-flight distribution, validating a PET image and the estimates of parameters, & conducting a Monte Carlo simulation for the Cramer-Rao Lower Bound of parameters,
Skills required: Python, PET imaging, Cramer-Rao Lower Bound, Monte Carlo Simulation

Graduate Teaching Assistant | University of Central Florida, Orlando, FL
Department of Statistics and Data Science, September 2020 - August 2024
Courses: Principles of Statistics (*Instructor of record*), Statistical Foundations of Data Science and AI II, Statistical Applications of Matrix Algebra, Regression Analysis, Statistical Theory II, Applied Time Series, Advanced Computer Processing of Statistical Data, Statistical Foundations of Data Science and AI I, Principles of Statistics, Loss Models II, Honors Statistics Methods I, & Theory of Interest
Skills required: Classroom Management, Instructional Strategies, Curriculum Development, Student Engagement, Mentorship

Research Assistant | University of Alabama, Tuscaloosa, AL
Educational Psychology, School of Education, August 2018 - May 2020
Roles: Research on individual's difference in basic arithmetic tasks with EEG, running an EEG experiment for math processing in arithmetic tasks in bilinguals, building a task-stimuli environment on PsychoPy and E-Prime, & conducting an EEG experiment and analyzing brainwaves using EEGLAB on MATLAB.
Skills required: MATLAB, EEGLAB, PsychoPy, E-Prime, Python

Data Science Consultant | Hong Kong University of Science and Technology, Hong Kong
Department of Management of Information Systems, Business School, October 2017 – March 2018
Roles: Conducting web-crawling to gather big data on blockchain transaction history & developing an algorithm to construct a graph representing blockchain network connections.
Skills required: Data (Web) Crawling, Blockchain, Python

Research Assistant | Korea Foundation for the Advancement of Science and Creativity, Seoul, Korea
Reinforce Mathematics Education, April 2015 – July 2015
Roles: Participating in the national curriculum development of Economic Mathematics and exploring mathematical tasks in advanced mathematics
Skills required: Curriculum Development, Collaboration, Advanced Mathematical Analysis

Research Assistant | Seoul National University, Seoul, Korea
College of Education, March 2014 – July 2015
Roles: Research on flipped learning for STEM, administration on student affairs, & teaching STEAM classes
Skills required: Collaboration, Instructional knowledge and skills

RESEARCH EXPERIENCE

1. **Kim, J.,** Kang, S., Morales, J. F., Klose, M. Wilcokcs, R. J., Daniels, M. J. Belfiore-Oshan, R., Walter, G. A., Rooney, W. D., Vanderborne, K., Kim, S. (2024). Developing a Model-Informed and AI-Powered Clinical Trial Simulation Graphical User Interface Using MonolixSuite™ and R Shiny: A Hands-on Tutorial in Applications to Duchenne Muscular Dystrophy. *Clinical Pharmacology and Therapeutics: Pharmacometrics & Systems Pharmacology.* (*Under review*)
2. Anchan, M., **Kim, J.,** & Soylu, F. (2018, November). Comparing Math Processing in Bilinguals and Monolinguals: Retrieval-based and Calculation-based Arithmetic, Poster presented at the *Psychonomics* 2018, New Orleans, USA.
3. Cho, H. Jeong, J., **Kim, J.,** Seo, Y., & Lee, S. (2016). Math-based Coding Education in Korean School, 2016 Constructionism, Bangkok, Thailand. https://www.researchgate.net/publication/319213802_Math-based_Coding_Education_in_Korean_School
4. Song, H., **Kim, J.,** Lee, J., & Lee, H. S. (2011). Analysis of vertical handover latency for IEEE 802.21-enabled Proxy Mobile IPv6, 13th International Conference on Advanced Communication Technology (2011 ICACT), Gangwon, Korea, pp. 1059-1063. https://ieeexplore.ieee.org/document/5745991

EDUCATION

Ph.D. Candidate in Big Data Analytics
University of Central Florida, Orlando, FL
***Dissertation Title**: Multi-Layer Polynomial Chaos Expansion for Uncertainty Quantification*
***Dissertation Committee:** Dr. Mengyu Xu (Chair), Committee: Drs. Liqiang Ni, Rui Xie, & Marianna Pensky*
***Coursework**: Asymptotic Methodology in Mathematical Statistics, Multivariate Statistical Methods, Statistical Asymptotic Theory for Big Data Analysis, Statistical Computing II, Applied Time Series Analysis, Statistical Learning Theory, Bayesian Analysis Approximation Theory (GPA: 3.95/4.00)*

M.S. in Statistics & Data Science 2022
University of Central Florida, Orlando, FL
***Coursework**: Advanced Computer Programing of Statistical Data, Regression Analysis, Theoretical Statistics I, Logistic Regression, Theoretical Statistics II, Data Preparation, Network Science, Data Mining Methodology I, Statistical Computing I, Parallel & Distribution Database Systems, Statistical Application of Matrix Algebra, Data Mining Methodology II (GPA: 3.92/4.00)*

M.S. in Mathematics Education 2016
Seoul National University, Seoul, Korea
***Thesis Title:** An EEG Test Environment Design for Measuring and Analyzing the Brain on Mental Rotation Task*
***Thesis Chair**: Dr. Hanhyuk Cho*

B.S. in in Mathematical Sciences 2008
Korea Advanced Institute of Science and Technology, Daejeon, Korea
***Minor** in Electronic Engineering*
***Excellent Research Award** on Undergraduate Dissertation*

TEACHING EXPERIENCE

Instructor of Record

Principles of Statistics
University of Central Florida, Orlando, FL
Summer 2024 (SPI: 4.85 / 5.00), Spring 2024 (SPI: 4.14 / 5.00), & Fall 2023 (SPI: 4.08 / 5.00)

Roles: Creating plans for undergraduate courses, teaching principles of statistics and evaluating and grading students' performance on assignments and exams

Teaching Assistant

Statistical Foundations of Data Science and AI II University of Central Florida, Spring 2023
Statistical Applications of Matrix Algebra University of Central Florida, Spring 2023
Regression Analysis University of Central Florida, Fall 2022
Statistical Theory II University of Central Florida, Fall 2022
Applied Time Series University of Central Florida, Spring 2022
Advanced Computer Processing of Statistical Data University of Central Florida, Fall 2021
Statistical Foundations of Data Science and AI I University of Central Florida, Fall 2021
Principles of Statistics University of Central Florida, Spring 2021
Loss Models II University of Central Florida, Spring 2021
Honors Statistics Methods I University of Central Florida, Fall 2020
Theory of Interest University of Central Florida, Fall 2020