Zhuodiao Kuang

Email: zk2275@cumc.columbia.edu Tel: (+1) 3473688444

Education

Columbia University Irving Medical Center **09/2023-06/2025**

- Master of Science in Biostatistics
- GPA: 4.165/4.0
- Advisor: Prof. Zhezhen Jin, Prof. Tian Gu, Prof. Molei Liu

Renmin University of China **09/2019-06/2023**

- Bachelor of Science in Statistics
- Major GPA:3.85 Rank: 7/39
- Minor in big data and data science
- Advisor: Prof. Yifan Sun, Prof. Cunjie Lin, Prof. Wangli Xu, Prof. Mark Vogelsberger from MIT

University College London (Online Exchange Program) **07/2021-08/2021**

- Courses in Data Science: Data Science and Big Data Analytics

Skills

R(inluding Armadilo), Python, C, C++, Minitab, Matlab, Excel, Mysql(Sql Server), MongoDB, PHP, SPSS, SAS

Research Interests

Transfer Learning, Knockoff Selection, Nonparametric Models, Statistical computing, etc.

Undergraduate Thesis

Kernel Knockoffs Selection in Time Series(Chinese Version)

collected in CNKI as an excellent paper(5%)

Awards & Honors

- Outstanding Graduates(25%) 2023
- Merit Student for three consecutive years (1%), Renmin University of China 2020 & 2021 & 2022
- Candidate for Baosteel Grand Prize(3%) 2022
- The Second Prize Scholarship (10%), Renmin University of China 2022
- The Second Prize of Artistic Performances for Celebrating the 100th Anniversary of the Founding of the Communist Party of China, Renmin University of China 2021
- The First Prize of the 400-meter Race in preliminary contest, Renmin University of China 2021
- The First Prize in 2019, Gold Award in 2020, and Grand Prize 2021 of Aerobics Competition
- The Second Prize of Progress in the study (less than 5%), Renmin University of China 2020

Publication

- **Zhuodiao Kuang,** Transfer Learning in Brain Tumor Detection: From AlexNet to Hyb-DCNN-ResNet ,*Conference Proceedings Citation Index(CPCI) & China National Knowledge Infrastructure(CNKI) & 2022 International Conference on Software, Data Processing and Information Technology(SDPIT 202*2, ISSN:2791-0210**)**
- Wei Zhao, **Zhuodiao Kuang,** The Effect of Directors' and Officers' Liability Insurance on the Quality of Qualitative Disclosures, Accepted by: EAFC 2022 in 《Accounting and Finance》（R&R for SSCI, ISSN:1467-629x）

Teaching Assistant

Statistical Computing **02/2023-06/2023**

Lecturer: Prof. Wangli Xu, Center for Applied Statistics of Renmin University of China

Skills: Building regression models with R, Helping students with academic problems, Gathering students' requests for class and Evaluating their performances

Regression Analysis **09/2022-01/2023**

Lecturer: Prof. Cunjie Lin, Center for Applied Statistics of Renmin University of China

Skills: Building regression models with R, Helping students with academic problems, Gathering students' requests for class and Evaluating their performances

Research Assistant

National Research Program "Evaluation of China's Enterprises Innovation" held by Renmin University of China **07/2021-09/2021**

Supervisor: Professor Xiaohua Xia, Institute of China's Economic Reform & Development, Renmin University of China

Skills: Scraping data with Python, Sorting data with Python and Excel

Researches

FastCOMMUTE **09/2023-Present**

Supervisor: Prof. Tian Gu, Assistant Professor in Biostatistics, Columbia University Mailman School of Public Health

Evaluation of Undergraduate Education of Renmin University of China in 10 years **11/2022-05/2023**

Commissioned by Academic Records and Registration Office

- Set research goals and apply for private datasets of Renmin University
- Build models to evaluate the relationship between multiple aspects and students' academic performance
- Demonstrate the results with graphs using R and Python

Kernel Knockoffs selection in time series analysis **09/2022-12/2022**

Supervisor: Prof. Wangli Xu, Dean of Biostatistics Department, Center for Applied Statistics of Renmin University of China

- Review methematical theories about nonparametric tests and relevant source code
- Compare the computing effiency of C++, Rcpp and R
- Learn basic commands of Rcpp(Armadillo) and practise building various functions
- Rewrite all basic nonparametric tests in Rcpp and try to upload the R package
- Write a paper and upload on the CRAN

The Effect of Directors' and Officers' Liability Insurance on the Quality of Qualitative Disclosures(Under review by SSCI) **03/2022-07/2022**

Leader: Dr. Wei Zhao, Accounting Department of Commercial College, Renmin University of China

Skills: Scraping data with Python, Sorting data with Python and Excel, MongoDB

- Read papers about the effect of directors' and officers' liability insurance
- Help design and revise TONE's function
- Got textual and numerical data from websites

Transfer Learning in Brain Tumor Detection: From AlexNet to Hyb-DCNN-ResNet, Data Science and Big Data Analytics Online Research Seminar **02/2022-05/2022**

Supervisor: Prof. Mark Vofelsberger, Massachusetts Institute of Technology (MIT)

Skills: Data Retrieval, Statistics, Databases, Machine Learning, Data Visualization, Data Mining, Data Exploration, Natural Language Processing, and Paralleled Computing Techniques

- Read papers about transfer learning in automatically detecting brain tumor in magnetic resonance imaging
- Set up the environment and preprocess the data of brain tumor detection, and presented the CNN model with data augmentation and model performance
- Displayed the Natural Language Processing (NLP) and implementation parts with statistical graphs and flow charts
- Wrote the paper and made the presentation

Flexible semiparametric forecasting models for time series 11/2021-1/2022

Supervisor: Prof. Cunjie Lin, Center for Applied Statistics of Renmin University of China

Skills: Rcpp,Rmarkdown,Armadillo

- Read papers about semiparametric forecasting models and autoregression for time series
- Compared the efficiency of predicting with different R packages and pairs of parameters
- Design new models with penalised variables when the dimension of parameters adding up

Research on Spatio-temporal Coupling and Differentiation Relationship between the Central and Local Governments under the Outbreak of COVID-19 Situation in China

05/2020-05/2021

Supported by 2020 Renmin University of China Undergraduate Scientific Research Fund

Supervisor: Prof. Yanyun Zhao & Hanfang Yang, Renmin University of China

Team Leader of Three Members

- Crawled data from texts provided by governments and extracted keywords through text word frequency analysis
- Classified keywords into five parts based on keywords and their numbers that were included in governments' policies
- Made fitting prediction by Analysis of Time Series (GARCH, ARIMAX, Granger, X13)
- Analyzed government's attitude, changes in the financial market, and the epidemic situation in the COVID-19 background
- Realized the visualization of each provincial government's attitude and epidemic situation by R and Python
- Wrote the paper

Shadowing

Pyramid Pooling Module-Based Semi-Siamese Network: A Benchmark Model for Assessing Building Damage from xBD Satellite Imagery Datasets 11/2020-12/2020

Supervisor: Prof. Yanbing Bai, Renmin University of China

- Achieved the function of evaluating damages caused by earthquakes
- Collected and analyzed data and then wrote the paper

Technical Solution Discussion for Key Challenges of Operational Convolutional Neural Network-Based Building-Damage Assessment from Satellite Imagery: Perspective from Benchmark xBD Dataset 09/2020-10/2020

Supervisor: Prof. Hanfang Yang, Renmin University of China

- Helped Achieve the function of evaluating damages caused by earthquakes
- Collected and analyzed data and then wrote the paper

- Got Acquainted with Technology of Image Recognition and Basic Knowledge of Convolutional Neural Network

Competitions

Contemporary Undergraduate Mathematical Contest in Modeling

Name of Presenting Organization ： China Society for Industrial and Applied Mathematics

1. Experimental Design of Using Ethanol Coupling to Prepare C4 Olefin for Optimization

The National Honorable Mention **09/2021**

- Achieved the regression analysis by R and designed the experiment
- Analyzed and classified experimental data and then built modes by the regression equation

2. Study on the Credit Decision Making based on Dual-objective Linear Programming and Random Forest **09/2020**

Team Leader of Three members & The Honorable Mention of Beijing

- Adopted Excel and C++ to preprocess data
- Built the model for business indicators based on the credit risk index evaluation system of AHP and entropy method to get the credit risk index
- Established the double-target optimization credit decision model and obtained decision results after considering banks' preferences

3. Identification of weathered glass cultural relics based on statistical inference and machine learning

The Honorable Mention of Beijing **09/2022**

- Quantifies the relationship between different attributes of relics by using Ruskal-Wallis chi-square test, Fisher exact test and Kendall's coefficient of concordance
- Analyzed and classified different types of relics of glass by their features, using both supervised learning and unsupervised learning
- Created a model to bridge the gap between unsupervised learning and supervised learning

Activities

Member of Living Rights and Interest Department, Students' Union **09/2019-09/2020**

- Inspected sanitation of students' dormitory and safety utilization of electric power

Member of Social Investigation **01/2021-11/2021**

- Investigated the reason, process, and current situation of Beijing 798 Art Zone which transformed itself from an industrial park to an art zone

Participant, United Nations International Children's Emergency Fund (UNICEF) in China **02/2022-11/2022**

- Made donations to the UNICEF for children

Student in Charge Of General Affairs & Class President **09/2021-06/2023**

- Design questionnaires to investigate difficulties that students encounter and try to help them solve those problems
- Deliver information about campus living to students, such as telephone-fraud
- Collect information to provide convenience to students, such as intern opportunities
- Remind students of taking nucleic acid tests in time