JIZHOU KANG

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EDUCATION

University of California, Santa Cruz   **Sep 2019 - Present**
Ph.D. Candidate in Statistics   *Santa Cruz, CA*

- Research Interest: Bayesian causal inference; Bayesian neural network; uncertainty quantification for large computer models .

Johns Hopkins University   **Aug 2016 - Jan 2018**
M.S.E. in Financial Mathematics   *Baltimore, MD*

- Courses: Bayesian Statistics, Uncertainty Quantification, High-Dimension Approximation, Statistical Learning, Stochastic Calculus, Convex Optimization, Monte Carlo and Data mining.
- Overall GPA: 3.94/4.00
- Teaching Assistant: Applied Statistics and Data Analysis, Probability and Statistics.

Xi'an Jiaotong University   **Aug 2012 - Jun 2016**
B.S. in Honors Program of Math   *Shaanxi, China*

- Xi'an Jiaotong University Siyuan Scholarship for academic performance(2013,2015)
- Everest Scholarship for distinguished research assistant, 2nd Price (2015)

Georgia Institute of Technology   **Jan 2015 - May 2015**
Exchange Student Program   *Atlanta, GA*

- Courses: Probability and Statistics, Matrix Analysis and Algebra, Academic English.
- Major GPA: 4.17/4.30 and Overall GPA: 3.78/4.30

SUMMARY OF QUANTIFICATION

Programming Skills	⋄ Coded data analysis methods from basis in R and Python
	⋄ Used SQL commands to extract and manipulate data
Theoretical Knowledge	⋄ Developed machine learning algorithms in classes and research projects
	⋄ Applied econometrical method to conduct causal inference
Related Experience	⋄ Team-worked with people to solve data-driven problems
	⋄ Conveyed quantitative result to people with few related knowledge

WORKING EXPERIENCE

Center of Complex Decision Analysis, Fudan University   **May 2018 - Aug 2019**
Researcher and Data Analyst   *Shanghai, China*

- Participated in the project *Global Investment Environment for Machinery Industries*, major work including development of panel data regression model for finding firm growth drivers and feature importance study for FDI with developing country characteristics.
- Crawled and mined sales data from popular online shopping website and achieved the goal of recognizing consumption pattern in a Chinese dairy market research.
- Applied advanced econometrical and statistical models to quantify the effect of Brexit on the UK's economic and financial fields. We successfully predicted the drop of Pound sterling in late July 2019.
- Developed a package in R for exploratory data analysis, especially business data. More information and vignettes can be found at `https://jkang37.github.io/Data-Processing-and-Plotting/`.

RESEARCH EXPERIENCES

Johns Hopkins University   **Jun 2017 - Feb 2018**
Bayesian Inference for Complex Mathematical Model   *Baltimore, MD*

- Reviewed literature about Gaussian process, uncertainty quantification and model calibration.
- Researched on finding appropriate prior for a new calibration method: exploring subjective prior, deriving reference prior, and proving propriety as well as running simulations to compare their property.
- Tested validation of new method by using MCMC simulation to solve a real calibration problem for volcano model and compared with other existing methods.
- Worked on the paper *Objective Bayesian Calibration for Imperfect Mathematical Models*.

Johns Hopkins University   **Feb 2017 - May 2017**
House Price Prediction Using Advanced Statistical Learning Method   *Baltimore, MD*

- Reviewed literature about data cleaning, feature selection, and statistical modeling.
- Coded in R for missing data imputation, data visualization and exploratory data analysis.
- Implied Lasso regression and tree based method to select features and do out-of-sample prediction.
- Ranked top 10% among more than 2000 teams in a related Kaggle competition.
- Extended the method to a big dataset (millions of items) and developed a spacial-temporal simulator.

Johns Hopkins University   **Apr 2017 - May 2017**
Natural Language Processing and Application in Spam/Ham Detection   *Baltimore, MD*

- Implied "re" package in PYTHON and a TF-IDF criteria to process natural language.
- Coded in PYTHON a naive Bayesian classifier by minimizing a self-defined loss function.
- Achieved over 98% accuracy(about 30% improvement from the baseline model).

Johns Hopkins University   **Apr 2017 - May 2017**
Comparison Between Choices of Step Length for Gradient Descent Method   *Baltimore, MD*

- Coded in Matlab gradient descent algorithm with five different choice of step length: fixed step length, deceasing step length, formula based on local information, exact line search and inexact line search.
- Compared the performance of each algorithm in solving quadratic optimization problem with different Hessian matrix.
- Wrote a report about the advantages and disadvantages of each algorithm and how these may change as a function of the condition number of the Hessian matrix.

Xi'an Jiaotong University   **Jun 2014 - Jun 2015**
Medical Image Edge Detection   *Shaanxi, China*

- Developed and modified the new image smoothing model based on TV model.
- Explored the optimization method of edge detection algorithm based on IRLS algorithm.
- Achieved specific segmentation based on Watershed Algorithm.
- Awarded prized National Technology Innovation Competition Certification.