Miaoshiqi LIU

Phone: +86 13051359826 | E-mail: lmsq15@mails.tsinghua.edu.cn rdlmsq@126.com | Address: Haidian District, Beijing, China

EDUCATION

Bachelor of Mathematical Science, Tsinghua University, Beijing, China Aug. 2015 – Jul. 2019 (Expected)

GPA: 3.6/4.0 (Overall), 3.9/4.0 (Major: Statistics), 4.0/4.0 (Junior Year)

Important Courses: Advanced Algebra (2) 4.0, Functional Analysis (1) 4.0, Differential Geometry 4.0, Probability Theory (1) 4.0, Linear Regression 4.0, Applied Stochastic Processes (Graduate Level) 4.0, Advanced Mathematical Statistics II (Graduate Level) 4.0, Bayesian Methods for Statistical Inference (Graduate Level) 4.0

GRE: Verbal: 159/170 (83rd Percentile), Quantitative: 170/170 (96th Percentile), Analytical Writing: 4.5/6.0 (82nd Percentile)

TOEFL iBT: 108/120 (R28, L26, S27, W27)

RESEARCH EXPERIANCE

Project: ARCH Model

Tsinghua University Center for Statistical Science, Beijing, China Feb. 2018 – Jul. 2018

Instructor: Lijian Yang (Tenured Full Professor, Center for Statistical Science, Tsinghua University)

- Participated in seminar on nonparametric estimation and functional data
- Conducted simulation in R to check the consistency of MLE (Maximum Likelihood Estimator) and LSE (Least Square Estimator) when determining the order of ARCH model

Project: The Association Between ICU Patients' Social Visits and Survival

Department of Statistics, University of Michigan, Ann Arbor, USA Jul. 2018 – Sep. 2018

Instructor: Xuming He (Chair and H.C. Carver Professor of Statistics, University of Michigan, Ann Arbor), Yang Chen (Assistant Professor of Statistics, University of Michigan, Ann Arbor)

- Independently established a research project investigating the association between ICU patients' social visits and survival, an under-explored field in medical data
- Utilized SQL language to search and extract information about ICU patients' social visits from the text data in MIMIC-III Database, mostly based on specific lexical features
- Conducted sentiment analysis on the extracted information via NLP method: one method involved distinguishing certain words and phrases as indicators of positive social visits, thus deriving a binary variable; another involved applying the existing sentiment analysis model in Python, thus obtaining a sentiment polarity score for each patient's social visits, which is a continuous variable
- Analyzed the association between ICU patients' social visits and survival: first explored the statistical relationship via a logistic regression model, and went further to check causal relationship using causal inference techniques, such as propensity score matching (PSM)
- Conclusion: According to logistic regression, positive social visits are correlated with higher in-hospital mortality, but after using PSM between the two groups, it turns out that whether the social visits are positive or not does not clearly influence the in-hospital mortality.

Project: Association Between Exposure to Air Pollution and Mortality Regarding Certain Diseases in China

Tsinghua University Center for Statistical Science, Beijing, China Oct. 2018 – Present

Instructor: Lijian Yang (Tenured Full Professor, Center for Statistical Science, Tsinghua University)

- Performed Literature Review on spatial temporal data and longitudinal analysis
- Writing thesis of varying coefficient model for gene-environment interaction

HONORS & AWARDS

Friends of Tsinghua – PetroChina Scholarship (1/89) Oct. 2018

Excellent Student Leader Oct. 2017

Second Prize | Beijing Contest District in CUMCM (China Undergraduate Mathematical Contest in Modeling) Sep. 2017

Second Place | Joint Singing Competition of Five Departments, Tsinghua University Dec. 2017

ACTIVITIES (LEADERSHIP & VOLUNTEER)

Leader | Department of Publicity, Department of Mathematical Science, Tsinghua University May. 2017 – May. 2018

Deputy Leader | Department of Organization, Youth League, Tsinghua University Sep. 2017 – Feb. 2018

Alto | Tsinghua Chorus, Artistic Association, Tsinghua University Sep. 2015 – Present

Volunteer | Strings 2016 (International conference of string theory) Aug. 2016

SKILLS

Languages: Mandarin (native), English (fluent), Japanese (intermediate)

Programming: R, C++, Matlab, Python, SQL, LaTeX