QI QI

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EDUCATION

University of Connecticut 2017 - 2020 (expected)
Ph.D. Statistics, Department of Statistics
GPA: 3.97/4.0

University of Connecticut 2015 - 2017
M.S. Statistics, Department of Statistics
GPA:4.0/4.0

Renmin University of China 2011 - 2015
B.S. Statistics, School of Statistics
GPA: 3.15/4.0

WORK EXPERIENCE

Research Fellow: Boehringer - Ingelheim Dec 2019 - present

- Conduct research for potential type I error inflation if using Chronic slope to assess treatment effect. Promote random change point model regarding preserved type I error rate.
- Conduct research for exposure-response analysis and construct segmented sigmoid Emax model for Phase II dose finding study.

Internship: Boehringer - Ingelheim May 2019 - Aug 2019

- Established change point detection model based on stochastic process and applied to Chronic Kidney Disease (CKD) data.
- Completed two manuscripts.

Research Assistant: Albert Einstein College of Medicine Aug 2017 - Dec 2019

- Conducted analyses to evaluate a new memory impairment classification system and investigated the prediction performance on Alzheimer's Disease.
- Completed three manuscripts.

Statistical Consultant: University of Connecticut Aug 2017 - May 2019

- Presented workshops: *Variable Selection with Demos in R* and *Survival Study Design and Analysis*.
- Completed several full projects, provided walk-in and online service.

RESEARCH INTERESTS

Longitudinal Data Analysis, Survival Analysis, Joint Modeling, Multi-stage Analysis, Stochastic Models, Data Visualization, Bayesian Methods, Machine Learning, Statistical Computing.

RESEARCH EXPERIENCE

Bayesian Zero-inflated Mixture Model for Multidimensional Microbiome Data 2019
Construct Bayesian zero-inflated mixture model and apply machine learning approach to cluster subjects and investigate effects from different treatments.

Bayesian Joint Models of Longitudinal Ordinal Outcomes and Time-to-event Data 2018-2019
Constructed joint models and ROC curves to evaluate predictive performance of a new classification for Alzheimer's Disease and compare with other markers.

A Multi-stage Stochastic Transitional Model in the Analysis of Longitudinal Data 2018-2019
Construct the stochastic multi-stage model to estimate transition probability among five stages from the new classification of memory impairment and establish reversible model.

Interactive Visualization of Difficulties of Scheduling Classes 2019
Conducted R shiny apps to visualize the occupancy of classrooms at University of Connecticut. Built a web-page for registrar office to describe the difficulties of classroom schedule and analyze the compliance of standard meeting pattern.

Interactive Visualization of Changes in Housing Condition in NYC 2019
Built R shiny apps to describe the changes in housing conditions for the first generation and second generation immigrant householders living in New York City.

Change Point Detection and Slope Estimation for eGFR 2019
Constructed random change point models using stopping time of Poisson process for estimating two/three intersecting lines.

Bayesian Mixture Model on Determination of Root Cause Frequency 2018
Conducted Bayesian Gaussian mixture model using power prior method to estimate the proportion of root cause and compared with EM algorithm.

Change Point Detection of Reputation Damage 2018
Constructed change point analysis to detect the change of customers' emotion and investigated reputation damage of United Airline based on high dimensional data obtained by text mining on the customers' comments from Facebook.

Cost-Benefit Study and Competing Risk Analysis on SEER data sets 2017
Conducted cost-efectiveness analysis, tested the equality between different cause of death and constructed semiparametric proportional hazards model for the cause-specific functions.

TECHNICAL SKILLS

R (mainly using packages *nimble, ggplot2, shiny, dplyr, R2jags, vegan, phyloseq, etc.*), SAS, SQL, Python, BUGS, JAGS, SPSS, AMOS, Matlab, Stata, LaTeX, Github, Mathematica

LEADERSHIP AND SCIENTIFIC ACTIVITIES

- **Committee Member**: Conference on Bayesian Modeling, Computation and Applications 2018
- **Session Chair**:
  - Joint Statistical Meeting 2019
  - Conference on Bayesian Modeling, Computation and Applications 2018

WORKING PAPERS

- Qi Qi, Lynn Kuo, Susan Resnick, Ellen Grober. Bayesian Joint Modeling of Longitudinal Ordinal Outcomes and Time-to-Event Data.
- Qi Qi, Guanyu Hu. Bayesian Mixture Model and Determination of Root Cause Frequency.
- Yaoshi Wu, Wansuk Choi, Qi Qi, Zhichao Sun, Qiqi Deng, Brian Jin. A Random Change Point Model Using Stopping Time of Poisson Process for Estimating Two Intersecting Lines.
- Yaoshi Wu, Qi Qi. A Random Two-change-point Model Using Stopping Time of Poisson Process and Estimation Function for Estimating Three Intersecting Lines.
- Ellen Grober, Qi Qi, Lynn Kuo, Richard Lipton. Predict Alzheimer's Disease Neuropathology Using A New Classification System of Memory Impairment.
- Ellen Grober, Qi Qi, Lynn Kuo, Richard Lipton. The Association of AD Neuropathology and the Free and Cued Selective Reminding Test with Immediate Recall.

WORK IN PROGRESS

- Qi Qi, Lynn Kuo, Susan Resnick, Ellen Grober. A Multi-stage Stochastic Transitional Model with Application to Baltimore Longitudinal Study of Aging.
- Qi Qi, Lynn Kuo, Sinyu Shen. Bayesian Zero-inflated Mixture Model with Application to High-dimensional Microbiome Data.

PRESENTATIONS

Interactive Visualization of Housing Condition Changes in NYC 2019
Speed presentation and e-poster for data challenge competition: *Joint Statistical Meeting (JSM)*

Predicting Alzheimer's Disease Using a New Classification System Based on Objective Memory Impairment Assessment 2019
Poster session for student paper competition: *the 33rd New England Statistics Symposium (NESS)*

A Multi-Stage Stochastic Model in the Analysis of Longitudinal Data 2018
Invited presentation: *Conference on Bayesian Modeling, Computation and Applications*

TEACHING EXPERIENCE

- Instructor, Introduction to Mathematical Statistics II (STAT 3345)
  - Spring 2019, Teaching Evaluation: 4.0 out of 5, Class Size: 41
- Instructor, Discussion Section of Introduction to Statistics (STAT 1000Q) and Elementary Concepts of Statistics (STAT 1100Q)
  - Fall 2018, Spring 2018, Fall 2017, Spring 2017, Class Size: 12
- Teaching Assistant, Advanced Probability (STAT 6325)
  - Fall 2018