Xian Lyu

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Education

Renmin University of China **09/2021 – 07/2023**
M.S. in Applied Statistics, Institute of Statistics and Big Data, GPA: 3.99/4.0, Rank: 1/29 *Beijing, China*

Xiamen University **09/2017 – 06/2021**
B.S. in Statistics, School of Economics, GPA: 3.89/4.0, Rank: 3/42 *Xiamen, China*

Working Experience

Tongji Hospital & National Health Commission of the PRC **07/2021 – 09/2021**
Data Analyst (Stata) *Beijing, China*

- Pre-processed 4 datasets (size of each dataset is $10^5 \times 10^2$) from National Health Service Surveys in 2003, 2008, 2013, and 2018 to unify the variables in different years, and used latent variable analysis to generate an SES (socioeconomic status) variable for each dataset.
- Calculated the age-gender standardized disease rate for several neurological diseases (stroke, Parkinson, etc.) in each year, and tested the trend between disease rates and years using generalized Cochran–Mantel–Haenszel (CMH) test.
- Identified possible influencing factors of different neurological diseases using logistic regression.

Research Projects

Sharing Platform for Aging and Health Data Analytics **09/2021 –12/2022**

Research Assistant, Renmin University of China

- Defined an index of the aging trend and wrote several general functions in R to calculate and visualize the index.
- Detected the changing point of the aging trend using restricted cubic spline and sliding window.

Aging Biomarker Identification and Multi-omics Analysis of Chinese Healthy People **03/2022 – Present**

Research Assistant, Beijing Hospital & Renmin University of China

- Selected aging biomarkers through high-dimensional protein data using a two-step procedure. Linear models was used first to filter some proteins, following the Bolasso, Bootstrap Elastic-Net and Bestsubset to select potential ones.
- Clustered the biomarkers based on their profiles (fitted using LOESS) and identified the biomarkers' aging trend.
- Predicted biological age using machine learning methods, including penalized regression models, tree models and ensemble techniques; currently analyzing data.

One-way Allocation Problem **06/2022 – Present**

Research Assistant, The University of Hong Kong

- Provided and proved an explicit solution to a baseline optimization problem regarding how to maximize the expected matches of demand and supply in a one-way node chain.
- Provided managerial properties of the solution and a polynomial-time algorithm to get the solution

Technical Skills

Programming: R, Python, C++, MATLAB, Stata
Tools and Frameworks: Git, LaTeX, Pytorch, Rcpp

Selected Awards

- 2021-2022, The First Prize Academic Scholarship in Renmin University of China
- 2021, Outstanding Graduate of Xiamen University
- 2017-2018, Chinese National Scholarship (Top 0.2%, Academic)

Other Experiences

- 2022 Fall, *Teaching Assistant*, Clinical Trail Design (Master's), Renmin University of China
- 2021, Gold Medal in Xiamen Marathon for Xiamen University 100^{th} Anniversary Special Race (Young Women's)
- 2017-2019, Gold Medal in 3, 000-meter running in Xiamen University Sports Meeting (Women's)