Kun Yue

(206)-245-0504 | yuek@uw.edu

SUMMARY OF QUALIFICATIONS:

- Knowledge and experience of statistical modeling, network estimation, high dimensional data, data visualization, hypothesis testing, supervise / unsupervised machine learning, experimental design.
- Over 5-years' experience of independent research and interdisciplinary collaboration.
- Proficient in R, Latex; Familiar with Python, Keras, Matlab, SQL, SAS, C++.

Education

Expected 2022 **University of Washington**, Seattle, WA
Advisor: Dr. Ali Shojaie
Ph.D. in Biostatistics, GPA 3.86/4.00
Relevant coursework: Causal modeling, Nonparametric regression, Regression methods for independent and dependent data, Categorical data analysis, Epidemiology methods

2013 – 2017 **University of Hong Kong**, Hong Kong
B.S. in Statistics, GPA 3.84/4.00
Relevant coursework: Statistics in clinical medicine and bio-medical research, Design and analysis of experiments, Time series

Technical Skills

Proficient in R, Latex

Familiar with Python, Keras, SQL, Matlab, SAS, C++, Linux

Work Experience

06/2020 – 08/2020 **Advanced Consumer Modeling Statistician Intern**
Procter & Gamble, Cincinnati, OH

- Evaluated two sleeping metrics algorithms based on personal device data using repeated measurement modeling. Provided recommendations which can reduce future study cost by 85%.
- Recommended appropriate statistical models; provided consultancy, insights and supporting documents for various consumer research studies.

09/2017 – Present **Research Assistant**

University of Washington, Seattle, WA

Project 1: Fast estimation and inference for linear mixed model

- Developed novel estimation and inference algorithm for linear mixed model with large datasets, accelerating standard estimation speed by 20 times.
- Enhanced R package (netgsa) to optimize algorithm implementation.

Project 2: Network estimation with compositional data

- Contributed to book chapter with in-depth literature review and simulation to evaluate various compositional network estimation algorithms.

Project 3: Compositional missing data recovery via machine learning

- Developed compositional missing data recovery method using variational autoencoder through Keras implementation.

Project 4: Compositional data modeling with supervised learning

- Designed and implemented compositional data models using constrained

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matrix-penalized regression and ADMM algorithm.

05/2016 – 08/2016 **Research Analyst**
University of California, Davis, CA
- Collaborated with industry scientists and provided statistical consultancy.
- Performed data cleaning and analysis in SAS and R, led statistical modeling and hypothesis testing.

Projects

09/2019 – Present **Brain network with penalized graphical models and mixed-effect models**
- Visualized fMRI time series as brain networks with R (ggplot2) to investigate disease related brain network patterns.
- Developing novel estimation and inference framework for both static and dynamic brain networks with multi-subject high dimensional time series, using penalized graphical models and mixed-effect models.

12/2018 – 12/2019 **Baseline drift influence under response-adaptive trial design**
- Devised strategic simulations to show that baseline drift induces point estimation bias and test power inflation under adaptive trial design, applying generalized linear mixed regression methods.

09/2016 – 06/2017 **Online data mining for topic analysis with latent class modeling**
- Performed natural language processing to JSON files with Python, collected Twitter data with Amazon Web Services and Twitter API Python interface.
- Modified, implemented, and evaluated latent class topic models with Python.

05/2016 – 08/2016 **High-dimensional functional connectivity study with unsupervised learning**
- Developed novel similarity metric from frequency domain for high dimensional brain imaging (time series) data.
- Performed hierarchical clustering to obtain anatomically meaningful brain regions based on functional connectivity metrics.

Teaching Experience

09/2019-12/2019 **Teaching Assistant**
University of Washington, Seattle, WA
- Served as teaching assistant for advanced graduate level biostatistics course: Regression Method for Independent data.
- Advised students, prepared coursework solutions, and collaborated with lecturer to improve lecture contents.

Leadership Experience

09/2018 – Present **Statistical Learning Applied to Biostatistics (SLAB) Lab**
University of Washington, Seattle, WA
- Lead paper discussions on various machine learning topics: e.g. de-biased lasso regression estimation, high dimensional mixed model estimation

04/2014 – 04/2015 **Executive committee, Lee Shau Kee Hall Students' Association**
University of Hong Kong, Hong Kong
- Organized various activities for over 300 residents in Lee Shau Kee Hall, including orientation camp, cultural festival and sports competition.

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- In charge of student activity related financial matters, prepared annual committee administration report, annual budget and financial report.

Awards

2017	Dr. Patrick S C Poon Scholarship, University of Hong Kong
2017	First-Class Honor Graduate, University of Hong Kong
2016	Oversea Research Fellowship, University of Hong Kong
2015	Summer Research Fellowship, University of Hong Kong
2014	Berkeley summer exchange scholarship, University of Hong Kong
2014	Outstanding academic student award, University of Hong Kong

Publications

1. Enkhmaa, B., Anuurad, E., Zhang, W., **Yue, K.**, Li, C. S., & Berglund, L. (2017). The Roles of Apo (a) Size, Phenotype, and Dominance Pattern in PCSK9-inhibition Induced Reduction in Lp (a) With Alirocumab. Journal of lipid research, jlr-M078212.
2. Magaret, A., **Yue, K..** Conceptualization and quantification of bias and type I error due to drift in outcome-adaptively randomized clinical trials with binary endpoints. {Submitted}
3. **Yue, K.**, Ma, J., Thornton, T., Shojaie, A.. REHE: Fast Variance Component Estimation in Linear Mixed Models. {Submitted}
4. **Yue, K.**, May, S., Brown, S.P. Justify using two sample t-test for testing treatment difference in mean with zero-inflated data and moderate sample size. {In Preparation}
5. Hellstern, M., Ma, J., **Yue, K.**, Shojaie, A.. netgsa: Fast computation and interactive visualization for topology based pathway enrichment analysis. {Submitted}.