Ziyang(Jacob) Liu

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EDUCATION

University of Arizona Tucson, AZ
Ph.D. in Statistics Aug 2021 - Now
- GPA: 4.0/4.0
- Teaching Assistant at the Department of Mathematics

University of Pennsylvania Philadelphia, PA
M.S. in Statistics, Measurement and Research (Quantitative Methods) Aug 2019 - Dec 2020
- GPA:4.0/4.0
- Awards: Merit Scholarship for admission
- Research Assistant at Penn Center for Learning Analytics

Beijing University of Technology Beijing, China
B.E. in Civil Engineering Sept 2015 - Jun 2019
- GPA: 3.91/4.0
- Awards & Honors: Academic Scholarship (Top 10%), Recipient for special academic funding, One of two First Prize in Beijing University of Technology physics competition, Second Prize in Beijing University of Technology math competition, Third Prize in National English Competition for College students

The Hong Kong Polytechnic University Hong Kong, China
Student Exchange Program Sept 2018 - Dec 2018

PAPERS ADMITTED

Karumbaiah, S., **Liu Z**., Baker, R.S., How does Students' Affect in Virtual Learning Relate to Their Outcomes? A Systematic Review Challenging the Positive-Negative Dichotomy, LAK22

RESEARCH EXPERIENCE

Penn Center for Learning Analytics Philadelphia, PA
Research Assistant (Supervisor: Ryan S. Baker, Ph.D.) May 2020- Apr 2021
Comparing Different Latent Knowledge Tracing Algorithms
- Applied different algorithms (Bayesian Knowledge Tracing, Elo Rating System, Performance Factor Analysis) with Python to trace student knowledge in a game-based learning process
- Predicted students correct rates and updated item difficulties
Systematic Review of Correlation Between Affect states and Learning Outcomes
- Went through 1861 papers and selected 58 of them which focused on the effect of affect states on learning outcomes
- Classified learning outcomes, measurements and affect states, made a table to show the correlation summary
- Summarized study attributes such as sample size, statistical method, p-value of each empirical study
- Wrote the study attributes, descriptive statistics part of the draft
Predicting Quitting in Students Playing a Learning Game
- Data cleaning and exploratory data analysis with Python
- Conducted a Recurrent Neural Network (LSTM) to predict students quitting

University of Pennsylvania, Graduate School of Education Philadelphia, PA
Research Assistant (Supervisor: Wendy Chan, Ph.D.) Sept 2020- Feb 2021
Small Area Generalization
- Summarized research papers on propensity score matching and inverse probability sampling
- Compared different matching packages in R with simulated data

- Applied propensity score matching in R to estimate outcomes of treatment on students' math and reading grades

WORK EXPERIENCE

Verif-y Inc.   Philadelphia, PA
Data Analyst Intern (Part-time)   Jan - May 2020
- Data (text and numeric) cleaning and preparation and Excel
- Applied Tableau to do data visualization with information from the process of KYC (know your customer) and ACI (accredited investor screening) and gave suggestions to promote KYC process
- Used Google Analytics together with Tableau to give monthly reports on views on the company website, predicted future view numbers and sessions, provided appropriate advice for adjusting

UBiAi Technology   Beijing, China
Data Analyst Intern   Jul 2018 - Aug 2018
- Data visualization with R to figure out features (such as frequent path in a direction and annual mileage range) of different drivers
- Summarized papers on mile-based insurance, provided suggestions on a mile-based insurance pricing plan which aim give target customers a 30% discount compared to classic insurance to attract them
- Used the SARIMA model to fit monthly automobile sales of each major brand throughout China

Beijing Ipsos Market Consulting Co   Beijing, China
Analyst Intern   Jan 2018 - Feb 2018
- Tracked and cleaned data from historical and current financial statements to prepare analytical investment reports for clients
- Used pivot table in Excel to categorize the sale of household electric equipment according to city, brand, platform, etc. Ranked brands based on the unit sold and total profit and visualized the monthly ranking fluctuation of each brand
- Wrote queries with MySQL to manipulate data

CERTIFICATES

IBM Data Science, Coursera   Jul 2020

SKILLS

- Technical: R, Python (PyTorch, Scikit-learn, TensorFlow), Java, MySQL, SAS, Linux, Shell, Hadoop, RapidMiner, Golang, Tableau, Google Analytics, LATEX, LISREL
- Languages: Mandarin (native), English (fluent), Japanese (intermediate)