Yin Pingping

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EDUCATION

Southern University of Science and Technology (SUSTech) **2022/09-Present**
Master of **Mathematics** GPA **3.76/4.0**

South China Agricultural University(SCAU) **2018/09-2022/07**
Bachelor of **Statistics** Rank **1/61** GPA **3.90/4.0**

Professional Courses: Advanced Algebra (95)、Bayesian Statistics (97)、Machine learning (93)

RESEARCH INTEREST

Bayesian Inference, MCMC algorithoms, Machine Learning (Especially Variational Inference)

RESEARCH EXPERIENCE

Participation in the national innovation training project - About Machine Version for Lychee Automatic Feed Inspection and Processing Equipment **2021/03-2021/08**

- Writing part of literature review
- Designing orthogonal experiments and analyzing experimental data using statistical methods

Analysis of Weibo Comment Data for "Three Child Policy" Based on Data Mining Technology **2022/01-2022/05**

- Data Collection and Cleaning: Gathered and cleaned a substantial dataset of Weibo comments using web scraping techniques, ensuring data quality and usability.
- Sentiment Analysis: Conducted sentiment analysis, categorizing comments into positive, neutral, and negative sentiments using SnowNLP and a naive Bayes algorithm.
- The Topic Extraction and Enhancement: Utilized LDA for traditional topic modeling and enhanced it with the BERTopic model to accurately extract and understand key themes within comments.

Using the variational inference to improve the efficiency of MCMC algorithms **2023/03-present**

- Learn and apply Gaussian variational inference algorithms such as GVB with Cholesky decomposed covariance, GVB with factor decomposed covariance.
- Learn and apply MCMC algorithms such as random-walk Metropolis-Hastings, Gibbs, MALA, HMC, NUTS.
- Using Gaussian variational inference to derive a preconditioning matrix for Linear Transformation in Hamiltonian Monte Carlo, which is employed to tackle the challenging task of computing position-specific metrics in high-dimension.
- Utilizing the mixture of exponential-family variational approximation to identify the positions and approximate shapes of the modes in the target posterior, then design a suitable mixture transition kernel for tempered Hamiltonian Monte Carlo (HMC) that enables efficient transitions between modes.

Variational-Tuned MCMC Algorithms **2023/07-present**

- The collaborative paper in progress with my advisor, my responsibilities included: using VI technique, instead of MCMC burn-in, to generate the moment estimates that are required by some special MCMC algorithms.

HONORS & AWARDS

- National Scholarship(2020)

- The First Prize scholarship in SCAU(2018 , 2019 , 2020)
- The Meritorious Winner of the American Mathematical Contest in Modeling(2021)
- The 10th Market Research and Analysis Competition Final National Second Prize, Excellent Paper Award(2020)
- Third Prize of Guangdong Province, National Student Mathematical Modelling Competition(2020)
- Third prize in the "Teddy Cup" mathematics digging competition in China and second prize in Guangdong Province(2021)
- National Third Prize in the "China Youth Cup" Mathematical Modelling Competition(2020)
- Nomination for Star Party Member Award in the South China Agricultural University Model Leadership Program(2021)

INTERSHIP EXPERIENCE

Internship at Guangzhou Dio Information Technology Co. **Data Analysis Internship** **2020/07-2020/08**

- Participated in a python data analysis training course and a project on loan default prediction.
- In the project, I built a credit default prediction model based on logistic regression, decision tree, and random forest methods, compared the performance of models and came up with the best model, and wrote an internship report.
- I became more proficient in python-based programming and gained an initial understanding of machine learning.

Guangzhou Huanju Times Information Technology Co. **Data Analysis Internship** **2021/10-2022/01**

- Assist leader to monitor the daily core data of bigolive overseas live, use Excel and X-mind to clean and organize the data and sort out the activity rules.
- Use python to write functions according to the rules of the game, solidify the analysis framework, reduce time costs, understand the reasons for indicator variations and visual data to write reports and output data analysis results.

TEACHING EXPERIENCE

Southern University of Science and Technology **Teaching Assistant**

- MA304 Multivariate Statistical Analysis, Spring 2023
- MA309 Time Series Analysis, Fall 2023

PERSONAL SKILLS

- **Programming**:

R (Competent), Python (Competent), MATLAB (Understand), SAS (Understand), C++ (Understand)

- **Software/API**:

MS Office, LaTex, TensorFlow

- **Algorithm**:

MCMC algorithms(M-H,Gibbs,HMC,MALA); Gaussian Variational Inference

- **Language**:

English (CET-4(541), CET-6(535)), Mandarin Chinese (Fluent)