Terence, Junjie LIU

Mphil Student | Open Source Advocate

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Education

Hongkong Baptist University *(joint with BNU-HKBU United International College)*
Zhuhai & HKSAR, China

Mphil student in Mathematics (Probability and Statistics)   *2021-2023*

- Full Scholarship
- Research Interest:
    1. Statistical Inference
    2. Reasoning and Probabilistic Model
    3. Graphical Model and Complex Network
    4. Computational Social Science and Social Network
    5. HPC Structure and Resource Optimization

Hongkong Baptist University (BNU-HKBU United International College)
Zhuhai, China

Bachelor of Science (Honours) in Statistics   *2016 – 2020*

- Second Class Honours
- Activities, Awards and Societies:
    1. **Co-Funder** and **Core team member** of a CS interest group: UICHCC `https://www.uichcc.com`
    2. USBC Cluster (UIC-Statistics Bayes Cluster) Administrator `https://uicstat.com`

Experience

BNU-HKBU United International College
Zhuhai, China

Research Assistant under Dr. Yu-Hui DENG & Prof. Hua-Xiong HUANG's supervision   *June 2020 - August 2021*

- ShanXi Province Stroke Data Analysis
- Diabetic Kidney Disease Data Analysis
- Market & Social Media Sentiment Index
- Implementation of Statistical Model and Deep Neural Network in Financial Data Analysis

Lab Manager & Server Administrator - Department of Statistics   *June 2018 - August 2020*

- Built the first high-performance computing cluster: USBC (UIC-STAT Bayes Cluster) in UIC-STAT department
- GitHub link: `https://github.com/Bayes-Cluster`

Undergraduate Student Researcher under Prof. Kang-Too TSANG's supervision   *June 2019 - August 2020*

- Asymmetric Cryptography Algorithm Acceleration with Heterogeneous Structure

Guangzhou IPLOOK Network Technology Co Ltd
Guangzhou, China

Management Intern; Mentor: Mr.Jian Wang   *June 2020 - August 2020*

- Business Data Analytics
- Sales Technique
- Human Resurce Management Technique
- Leadership

Shenzhen Long shun Sheng Electronic Co Ltd
Shenzhen, China

Research Intern; Mentor: Mr.Zhijiang LIU   *May 2018 - August 2018*

- Business Data Analytics:
    1. Identifies target customers
    2. Exchange Rate Forecasting
    3. Route Planning in Logistics
    4. Decision Making

Skills

Programming Language: Python (intermediate) || R (intermediate) || MATLAB (beginner) || Shell script (intermediate).
Operating Systems: macOS & Linux & Microsoft Windows
Natural Language: Chinese (Mandarin & Cantonese) || English with IELTS score 6.5
Data: collecting, cleaning, mining, analysis, visualization
Statistical Methods:
   (a) Predictive modeling (regression, time series)
   (b) Statistical Inference (Bayesian Approach)
   (c) Hypothesis testing and Confidence intervals
Deep Learning: Most of the basic Neural Network model (CNN, RNN, and its variant). My interest is in the interpretability of deep learning and deep probabilistic model.

Selected Publications

JOURNAL

1. **Jun-Jie Liu**, Kang-Too Tsang & Yu-Hui Deng (2022) "A variant RSA acceleration with parallelisation" *International Journal of Parallel, Emergent and Distributed Systems* `https://doi.org/10.1080/17445760.2021.2024535`
2. **LIU, J.**, SUN Yiyang, Ma Jing, Tu Jiachen, DENG Yuhui, HE Ping, HUANG Huaxiong, ZHOU Xiaoshuang, & XU Shixin (2021). "Analysis of main risk factors causing stroke in Shanxi Province based on machine learning models." *Informatics in Medicine Unlocked,* 100712. `https://doi.org/10.1016/j.imu.2021.100712`
3. Ma, J., Sun, Y., **Liu, J.**, Huang, H., Zhou, X., & Xu, S. (2021). Multi-objective optimization and explanation for stroke risk assessment in Shanxi province. (in review at) *Scientific Reports* `https://arxiv.org/abs/2107.14060`
4. Hui, D., Sun, Y., Xu, S., **Liu, J.**, He, P., Deng, Y., ... & Li, R. (2022). Analysis of clinical predictors of kidney diseases in type 2 diabetes patients based on machine learning. *International Urology and Nephrology*, 1-10. `https://link.springer.com/article/10.1007/s11255-022-03322-1`

PROCEEDINGS

1. **J.J. Liu**, X.L. Peng, Y.H. Deng (2021). "Online Statistics Teaching-assisted Platform with Interactive Web Applications using R Shiny." (accepted by) *The 6th International Symposium on emerging Technologies for Education* `https://sete2021.uic.edu.cn`
2. **J.J. Liu**, K.K. Tsang, Y.H. Deng et al., "Improved Parallel RSA Cryptosystem with GPU for Network Information Security", *In The International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery*, 1061–1068, 2020. `https://doi.org/10.1007/978-3-030-70665-4_115`

Teaching

Teaching Assistant - COMP1023 Foundations of C Programming, BNU-HKBU UIC	Sem 1, 2022-2023
Teaching Assistant - MATH1173 Linear Algebra, BNU-HKBU UIC	Sem 2, 2021-2022
Teaching Assistant - STAT4103 Introduction of Deep Learning with Python, BNU-HKBU UIC	Sem 1, 2021-2022

Presentations

Online Statistics Teaching-assisted Platform with Interactive Web Applications using R Shiny. – SETE 2021 Conference Oral, T2-201 (BNU-HKBU UIC)	2021
Improved Parallel RSA Cryptosystem with GPU for Network Information Security – FSKD-ICNC 2020 Conference Oral, Online	2020
Alice, Bob & Eve's Story - UICHCC Event, T8-305 (BNU-HKBU UIC)	2019
Collaborating and Converging - UICHCC Event, T8-306 (BNU-HKBU UIC)	2018

Selected Projects

The Practice of Heuristic Teaching Mode Based on Interactive Visualization and the Establishment of Intelligent Evaluation System

WITH DR.YUHUI DENG IN BNU-HKBU UNITED INTERNATIONAL COLLEGE   *December 2021 - present*

- In this project, we are trying to
    1. trying to develop a python toolbox that can be used in optimization courses to visualize the mathematical theory and algorithm with 2D/3D plot and animation
    2. trying to develop a multi-dimensional evaluation method on student performance and teaching evaluation.

Modern Elementary Statistics Online Computing Platform

WITH DR.XIAOLING PENG AND PROF. KAI-TAI FANG IN BNU-HKBU UNITED INTERNATIONAL COLLEGE   *December 2021 - present*

- A online statistics teaching assisted platform, A web Application based on R and shiny
- A dynamic and interactive online statistics teaching aid platform based on the textbook: Modern Elementary Statistics（《现代基础统计学》）
- This work is supported by
    1. Centre for Teaching and Learning, BNU-HKBU United International College, UICR0400053-21CTL
    2. Guangdong Natural Science Foundation No.2018A0303130231
    3. Guangdong Higher Education Upgrading Plan(2021-2025) No.UICR0400001-22
    4. Guangdong University Innovation and Enhancement Project with No. of 2021GXJK382.
- GitHub: `https://github.com/Bayes-Cluster/MESOCP`

Next Generation Web-based Portal for USBC (Ongoing)

LEADER   *December 2021 - present*

- Started in 2018, USBC Maintenance Group provides technical support for UIC-STAT servers. In 2020, it successfully built the first computing cluster: USBC. Over 100 researchers and students from the department of statistics and data science used this cluster to conduct their research and projects.
- GitHub: `https://github.com/Bayes-Cluster/Code-Hub`

CEDApy: An Economic Data API package (Ongoing)

LEADER   *December 2021 - present*

- This is a "all-in-one" economic data collecting library, with both python
- You can check it on GitHub: `https://github.com/TerenceLiu98/CEDApy`

NewsFeed: Newsfeed based on GDELT Project

LEADER   *December 2021 - present*

- Based on the GDELT project, we are trying to build a newsfeed api for gathering the latest and historical news for easy investigation on the relation difference countries and the impact of the unexpected events
- You can check it on GitHub: `https://github.com/Cyclododecene/newsfeed/`