

# Jun Yu

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## EDUCATION

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### Peking University

*Ph.D. in Statistics*

- Supervisor: Prof. Mingyao Ai
- Dissertation: Design of Medical Experiments and Subsampling Techniques for Big Data

Beijing, China

2014/09–2019/07

### Nankai University

*B.S. in Mathematics and Applied Mathematics*

### Nankai University

*B.E. in Finance (Second major)*

Tianjin, China

2010/09–2014/07

Tianjin, China

2010/09–2014/07

## RESEARCH INTERESTS

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**Statistical theory and methodology:** Design of experiments; Sampling theory and subsampling techniques; Data reduction methods of big data

**Applied statistics:** Analysis the network data and solving the real-world problem via networks.

## WORKING EXPERIENCE

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### Assistant Professor

*School of Mathematics and Statistics, Beijing Institute of Technology*

### Ph.D. Graduate Supervisor of Statistics

*School of Mathematics and Statistics, Beijing Institute of Technology*

### Visiting Scholar

*Department of Statistics, University of Georgia.*

- Co-mentor: Prof. Ping Ma and Prof. Wenxuan Zhong

2019/09 – Present

Beijing, China

2021/11 – Present

Beijing, China

2019/12 – 2020/01

GA, USA.

## PUBLICATIONS<sup>1</sup>

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### Refereed journal papers

1. **Yu, Jun**<sup>#</sup>, Mingyao Ai<sup>\*</sup>, Zhiqiang Ye. “A review on design inspired subsampling for big data.” *Statistical Papers*, (2023), accepted.
2. Li, Mengyu<sup>#</sup>, **Jun Yu**<sup>#</sup>, Hongteng Xu, Cheng Meng<sup>\*</sup>. “Efficient Approximation of Gromov-Wasserstein Distance Using Importance Sparsification.” *Journal of Computational and Graphical Statistics*, (2023), accepted.
3. Li, Tao<sup>#</sup>, **Jun Yu**<sup>#</sup>, Cheng Meng<sup>\*</sup>. “Scalable model-free feature screening via sliced-Wasserstein dependency.” *Journal of Computational and Graphical Statistics*, (2023), accepted.
4. Ai, Mingyao<sup>#</sup>, Zhiqiang Ye, **Jun Yu**<sup>\*</sup>. “Locally D-optimal designs for hierarchical response experiments.” *Statistica Sinica*, 33 (2023), 381-399.
5. **Yu, Jun**<sup>#</sup>, Xiran Meng<sup>#</sup>, Yaping Wang<sup>\*</sup>. “Optimal designs for semi-parametric does-response models under random contamination.” *Computational Statistics and Data Analysis* 178 (2023): 107615.
6. **Yu, Jun**<sup>#</sup>, HaiYing Wang, Mingyao Ai<sup>\*</sup>, and Huiming Zhang. “Optimal distributed subsampling for maximum quasi-likelihood estimators with massive data.” *Journal of the American Statistical Association* 117 (2022): 265-276.
7. **Yu, Jun**<sup>#</sup> and Haiying Wang<sup>\*</sup>. “Subdata selection algorithm for linear model discrimination.” *Statistical Papers* 63 (2022), 1883–1906.

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<sup>1</sup>Remarks: \* corresponding author, # first and co-first author.

8. **Yu, Jun**<sup>#</sup>, Huimin Cheng, Jinan Zhang, Qi Li, Shushan Wu, Wenxuan Zhong, Jin Ye, Wen Zhan Song, and Ping Ma\*. “CONGO<sup>2</sup>: Scalable Online Anomaly Detection and Localization in Power Electronics Networks.” *IEEE Internet of Things Journal*, 9 (2022), 13862-13875.
9. Zhang, Jingyi<sup>#</sup>, Cheng Meng<sup>#</sup>, **Jun Yu**, Mengrui Zhang, Wenxuan Zhong, and Ping Ma\*. “An optimal transport approach for selecting a representative subsample with application in efficient kernel density estimation” *Journal of Computational and Graphical Statistics* (2022), accepted.
10. Meng, Cheng<sup>#</sup>, **Jun Yu**, Yongkai Chen, Wenxuan Zhong, and Ping Ma\*. “Smoothing splines approximation using Hilbert curve basis selection.” *Journal of Computational and Graphical Statistics*, 31 (2022), 802-812.
11. Ai, Mingyao<sup>#</sup>, **Jun Yu**, Huiming Zhang, and HaiYing Wang\*. “Optimal Subsampling Algorithms for Big Data Regressions.” *Statistica Sinica* 31 (2021): 749-772. (Highly cited paper)
12. Ai, Mingyao<sup>#</sup>, Fei Wang, **Jun Yu**<sup>\*</sup>, and Huiming Zhang. “Optimal subsampling for large-scale quantile regression.” *Journal of Complexity* 62 (2021): 101512.
13. Ai, Mingyao<sup>#</sup>, Yimin Huang, and **Jun Yu**<sup>\*</sup>. “A non-parametric solution to the multi-armed bandit problem with covariates.” *Journal of Statistical Planning and Inference* 211 (2021): 402-413.
14. Cheng, Huimin<sup>#</sup>, **Jun Yu**, Zhen Wang, Ping Ma, Cunlan Guo<sup>\*</sup>, Bin Wang, Wenxuan Zhong<sup>\*</sup>, and Bingqian Xu<sup>\*</sup>. “Details of Single-Molecule Force Spectroscopy Data Decoded by a Network-Based Automatic Clustering Algorithm” *The Journal of Physical Chemistry B* 125 (2021), 9660-9667 (Cover paper)
15. Wang, Sili<sup>#</sup>, Shengjie Min, **Jun Yu**, Huimin Cheng, Zion Tse, and WenZhan Song<sup>\*</sup>, “Contact-less Home Activity Tracking System with Floor Seismic Sensor Network,” *2021 IEEE 7th World Forum on Internet of Things (WF-IoT)* (2021), pp. 13-18.
16. Meng, Cheng<sup>#</sup>, **Jun Yu**, Jingyi Zhang, Ping Ma, and Wenxuan Zhong<sup>\*</sup>. “Sufficient dimension reduction for classification using principal optimal transport direction.” *Advances in Neural Information Processing Systems* 33 (2020).
17. Ai, Mingyao<sup>#</sup>, Yimin Huang, and **Jun Yu**. “Data-Based Priors for Bayesian Model Averaging.” In *Contemporary Experimental Design, Multivariate Analysis and Data Mining*, Springer, Cham, (2020): pp. 357-372.
18. **Yu, Jun**<sup>#</sup>, Xiangshun Kong<sup>#</sup>, Mingyao Ai, and Kwok Leung Tsui. “Optimal designs for dose–response models with linear effects of covariates.” *Computational Statistics and Data Analysis* 127 (2018): 217-228.
19. **Yu, Jun**<sup>#</sup>, Mingyao Ai<sup>\*</sup>, and Yaping Wang. “Optimal designs for linear models with Fredholm-type errors.” *Journal of Statistical Planning and Inference* 194 (2018): 65-74.

### Papers preprinted

1. Li, Mengyu<sup>#</sup>, **Jun Yu**<sup>#</sup>, Tao Li, Cheng Meng<sup>\*</sup>. “Core-elements for Least Squares Estimation”.
2. Cheng, Huimin<sup>#</sup>, Shushan Wu, **Jun Yu**, Haoran Lu, Wenxuan Zhong<sup>\*</sup>. “Graphon convolutional network: A highly efficient learner for random graph”.
3. Han, Yixin<sup>#</sup>, **Jun Yu**<sup>#</sup>, Nan Zhang<sup>#</sup>, Cheng Meng, Ping Ma<sup>\*</sup>, Wenxuan Zhong, Changliang Zou. “Leverage classifier: another look at support vector machine”.
4. Ye, Zhiqiang<sup>#</sup>, **Jun Yu**<sup>#</sup>, Mingyao Ai<sup>\*</sup>. “Optimal subsampling for multinomial logistic models with big data.”
5. Li, Mengyu<sup>#</sup>, **Jun Yu**<sup>#</sup>, Cheng Meng<sup>\*</sup>. “Importance Sparsification for Sinkhorn Algorithm.”

### GRANTS, HONORS AND AWARDS

2021/01–2023/12, National Natural Science Foundation of China (Grant No. 12001042), Young scholar program, Principal Investigator

2019/09–2025/12, Beijing Institute of Technology research fund program for young scholars, Started-up program, Principal Investigator

2019/06 Excellent Poster Award at Peking-Tsinghua Joint Statistics Colloquium

2019/06 Zhong Jiaqing Outstanding Paper Award at the 23rd Beijing-Tianjin-Hebei Youth Probability Statistics Academic Conference

2018/11 Third National Forum for Ph.D. Students in Statistics Excellent Paper Award (1st class)

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## TEACHING AND CURRICULUM DEVELOPMENT

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### **Graduate courses**

Advanced Theory of Statistics. 2021 Spring, 2022 Spring

### **Undergraduate courses**

Mathematical Statistics (MOOC)

- This course is built up together with Zhao, Ying; Tian, Yubin; Wang, Dianpeng; Kong, Xiangshun.
- The course is available in <https://www.icourse163.org/course/BIT-1466041162?from=searchPage>

### **Guest lectures**

Sampling Techniques: method, design, and applications. MSU-BIT Winter School, March 2021

Big data & Data Science: the next frontier for innovation, competition, and productivity. BIT Summer School, Aug 2021

Statics and Decisions: how to use randomness. BIT-Hong Shu Lin lecture, Nov 2021

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## ADVISING AND MENTORING

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### **Master's students**

Zhang, Yangyang; Yang, Xiaodan (2022)

Cao, Haoze; Lei, Kaifeng; Li Hengli; Liu, Zhihan; Liu Zhengfu (2023)

### **Undergraduate students**

He, Yuqin; Hu,Ze; Liu,Xiaosong; Wang,Huan; Wang,Zixi (2021)

Meng, Wenqian; Miao, Zuoyi; Xu, Fangyao; Xu, Jiachen; Xiong, Zhikang (2022)

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## PROFESSIONAL SERVICES

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### **Journal reviewer for**

Journal of the American Statistical Association; Journal of the Royal Statistical Society: Series C;

Journal of Statistical Planning and Inference; Statistics and Probability Letters;

IEEE Transactions on Big Data; IISE Transactions;

Journal of Computational and Applied Mathematics; Sankhya B;

Communications in Statistics – Theory and Methods; Metrika;

Journal of System Science and Mathematical Science; Journal of Applied Statistics and Management;

Journal of machine learning research; Statistical papers;

Statistic and computing;

### **Council member**

2021–present Committee of Uniform Design, Chinese Math Society.

2021–present Committee of Design of Experiments, CAAS.

2019–present Beijing Society for Applied Statistics.

2019–present Beijing Association for Big Data

## **Organizing committee member**

Symposium on design of experiments, Beijing Institute of Technology, 2021/05

## **INVITED TALKS AND PRESENTATIONS**

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### **Invited Talks**

1. Symposium on big data and intelligent processing, Peking University, Beijing, China, 2021/12
2. 14th International conference of the ERCIM WG on computational and methodological statistics and 15th International conference on computational and financial econometrics, King's College London, UK, 2021/12 (Participated online)
3. Symposium for Ph.D students in statistics, Guangzhou University, Guangzhou, China, 2018/11

### **Contributed Talks**

1. Conference on design of experiments and its application, Qufu Normal University, Rizhao, China, 2021/10
2. Conference on design of experiments and its application, Guangxi Normal University, Guilin, China, 2019/10
3. Peking-Tsinghua Joint Statistics Colloquium, Tsinghua University, Beijing, China, 2019/06
4. Beijing-Tianjin-Hebei Youth Probability Statistics Academic Conference, University of International Business and Economics, Beijing, China, 2019/06
5. Conference on design of experiments and its application, Beijing Institute of Technology, Beijing, China, 2018/10
6. Conference on design of experiments and its application, Lanzhou University of Finance and Economics, Lanzhou, China, 2017/10
7. Conference on design of experiments and its application, Qufu Normal University, Qufu, China, 2016/10