

# YUBAI YUAN

## CONTACT

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## EDUCATION

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<b>University of Illinois at Urbana-Champaign</b> Ph.D. in Statistics <b>Advisor: Annie Qu</b>	<i>August 2016 – May 2020</i>
<b>Sun Yat-sen University, China</b> M.S. in Statistics	<i>August 2014 – June 2016</i>
<b>Shandong University, China</b> B.S. in Financial Mathematics	<i>August 2008 – July 2012</i>

## RESEARCH INTERESTS

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Network data analysis, community detection, link prediction, mediation analysis and causal inference, active learning, crowdsourcing, optimal transport, latent factor modeling.

## PUBLICATIONS

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1. **Yubai Yuan** and Annie Qu. (2021) “Community detection with dependent connectivity.” *Annals of Statistics*, 49(4), 2378-2428. ASA SLDS section student paper award, 2019.
2. **Yubai Yuan** and Annie Qu. (2021+) “High-order joint embedding for multi-level link prediction.” *Journal of American Statistical Association*, accepted. <https://arxiv.org/abs/2111.05265>
3. Xuan Bi\*, Xiwei Tang\*, **Yubai Yuan\***, Yanqing Zhang\*, Annie Qu\*. (2021) “Tensors in statistics.” *Annual Review of Statistics and Its Application*, 8, 345-368 (\*equal contribution).
4. **Yubai Yuan**, Yujia Deng, Yanqing Zhang, Annie Qu. (2020) “Deep learning from a statistical perspective.” *Stat*, 9(1), e294.
5. Sarah Allison, Katherine Irwin Hamilton, **Yubai Yuan**, Gail Wallis Hague. (2020) “Assessment of progressive muscle relaxation (PMR) as a stress-reducing technique for first-year veterinary students.” *Journal of Veterinary Medical Education*, 47(6), 737-744.

## PAPERS UNDER REVIEW

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1. Yujia Deng\*, **Yubai Yuan\***, Haoda Fu, Annie Qu. “Query-augmented active metric learning.” Minor revision submitted, *Journal of American Statistical Association* (\*joint first author)  
Student paper award for ICSA Applied Statistics Symposium, 2021. <https://arxiv.org/abs/2111.04871>
2. Qi Xu, **Yubai Yuan**, Junhui Wang, Annie Qu. “Crowdsourcing utilizing subgroup structure of latent factor modeling.” Under review, *Journal of American Statistical Association*.
3. Jiuchen Zhang, **Yubai Yuan**, Annie Qu. “A tensor factorization recommender system with dependency.” Invited minor revision, *Electronic Journal of Statistics*.

4. Diqing Li, **Yubai Yuan**, Xinsheng Zhang, Annie Qu. “Joint modeling of change-point identification and dependent dynamic community detection.” Invited major revision, *Statistica Sinica*.

## MANUSCRIPTS

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1. **Yuan Yuan** and Annie Qu. “De-confounding causal inference via latent multiple mediators.”
2. **Yuan Yuan**, Wani Agaz, Donglasan Janelle, Chengqi Wang, Wildman Derek, Uddin Monica, Annie Qu “Differential expressed genes testing for count data with high overdispersion.”
3. **Yuan Yuan**, Babak Shahbaba, Norbert Fortin, Annie Qu “Hierarchical latent alignment for cross-species study.”

## AWARDS

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ASA Student Paper Award in Statistical Learning and Data Science Section, JSM, 2019.

Second Prize of the Graduate Student Scholarship in Sun Yat-sen University, 2014.

## TEACHING EXPERIENCE

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### **Instructor, University of Illinois at Urbana-Champaign**

- Stat 200: Statistical Analysis (Spring 2019)

### **Teaching Assistant, University of Illinois at Urbana-Champaign**

- Stat 425: Applied Regression and Design (Fall 2017)
- Stat 578: Statistical Learning in Data Science (Spring 2018)

### **Undergraduate Mentor, University of Illinois at Urbana-Champaign**

- Mentoring two undergraduate students on network data analysis project (Summer 2018)

## RESEARCH AND CONSULTING EXPERIENCE

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### **Postdoc Researcher, University of California Irvine**

June 2020 – current

*Advisor: Annie Qu*

- Causal mediation analysis and optimal transport project
- Differential expressed gene testing

### **Research Assistant, University of Illinois at Urbana-Champaign**

June 2019 – May 2020

*Advisor: Annie Qu*

- Hyperlink prediction
- Complex network data analysis
- Optimal transport

### **Statistical Consultant, Illinois Statistics Office**

May 2018 – Jan. 2019

- Provided statistical consultation over 30 projects
- Clients from Eli Lilly and Company, BioFortis Inc, Carle Foundation Hospital, and UIUC
- Machine learning algorithm development
- Experimental design (survey design, clinical trial design)
- Data analyses (longitudinal data, post hoc analyses, structural equation modeling)
- Grant proposal and medical protocol reviews

## PRESENTATION

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### Invited talks

- (2021) ICSA Applied Statistics Symposium.
- (2019) Joint Statistical Meetings, Denver, CO.
- (2018) Statistic Seminar, Fudan University, China.
- (2018) Conference of Statistical Challenges for Large-Scale Complex Data, Kunming, China.

### Contributed talks

- (2020) Joint Statistical Meetings, Virtual.
- (2018) Bohrer Workshop, Champaign, IL.

### Poster

- (2019) Workshop on Higher-Order Asymptotics and Post-Selection Inference, St. Louis, MO.
- (2019) Statistical Methods in Imaging conference, Irvine, CA.
- (2019) Symposium on Data Science and Statistics, Seattle, WA.
- (2018) Joint Statistical Meetings, Vancouver, Canada.
- (2018) The Conference on Statistical Learning and Data Science / Nonparametric Statistics, Columbia University, New York city, NY.

## REFeree EXPERIENCE

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Journal of the American Statistical Association (4), Journal of the Royal Statistical Society: Series B (3), Biometrika (1), Electronic Journal of Statistics (5), The American Statistician (1), Stat (1), 2019 International Joint Conference on Artificial Intelligence (5).

## SKILLS

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R, Python, Matlab, LATEX, SAS, C++

## SOCIETY MEMBERSHIPS

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American Statistical Association  
Institute of Mathematical Statistics

## REFERENCES

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### **Annie Qu, Ph.D.**

*Chancellor's Professor of Statistics*

University of California Irvine, Irvine, CA

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### **Xiaofeng Shao, Ph.D.**

*Professor of Statistics*

University of Illinois at Urbana-Champaign, Champaign, IL

Email: xshao@illinois.edu

### **Babak Shahbaba, Ph.D.**

*Professor of Statistics*

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### **Junhui Wang, Ph.D.**

*Professor of Statistics*

City University of Hong Kong, Hong Kong, China

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