

Ruoqi Liu

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🌐 ruoqi-liu.github.io

EDUCATION

The Ohio State University (OSU)

Ph.D. in Computer Science

Advisor: Prof. [Ping Zhang](#)

Columbus, OH

Mar 2019 - Dec 2023 (Expected)

The Ohio State University (OSU)

M.S. in Computer Science

Columbus, OH

2018 - 2019

Wuhan University (WHU)

B.Eng. in Computer Science

Wuhan, China

2014 - 2018

GPA: 3.78/4, Outstanding Graduate Award

Thesis: *Gene-Disease Associations Mining based on Recommendation System*

RESEARCH INTERESTS

My current research primarily focuses on the intersection of machine learning and causal inference: 1) leverage advanced machine learning techniques for addressing challenges in causal inference (e.g., treatment effect estimation), and 2) leverage causal inference for building explainable and robust machine learning models.

PUBLICATIONS

The full list of my papers are available at [Google Scholar](#).

* indicates equal contributions

- [1] **Ruoqi Liu**, Katherine H. Buck, Jeffrey M. Caterino, Ping Zhang, “Estimating Trustworthy Treatment Effects for Antibiotic Stewardship in Sepsis”, *Nature Machine Intelligence* (under the 3rd round review).
- [2] **Ruoqi Liu**, Pin-Yu Chen, Ping Zhang, “CURE: A Pre-training Framework on Large-scale Patient Data for Treatment Effect Estimation”, *ICLR 2023* (under review).
- [3] **Ruoqi Liu**, Lai Wei, Ping Zhang, “A deep learning framework for drug repurposing via emulating clinical trials on real world patient data”, *Nature Machine Intelligence* 3:68-75, 2021.
[Selected Media Coverage](#): Nature Reviews Drug Discovery, Ohio State News, Bio-IT World
- [4] Changchang Yin, **Ruoqi Liu**, Jeffrey Caterino, Ping Zhang, “Deconfounding Actor-Critic Network with Policy Adaptation for Dynamic Treatment Regimes.”, *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2022 (Acceptance rate: 254/1695 = 15.0%, research track, oral presentation).
- [5] **Ruoqi Liu**, Changchang Yin, Ping Zhang, “Estimating Individual Treatment Effects with Time-Varying Confounders”, *IEEE International Conference on Data Mining (ICDM)*, 2020 (Acceptance rate: 91/930 = 9.8%, regular paper, oral presentation).
- [6] Changchang Yin, **Ruoqi Liu**, Dongdong Zhang, Ping Zhang, “Identifying sepsis subphenotypes via time-aware multi-modal auto-encoder”, *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2020 (Acceptance rate: 216/1279 = 16.9%, research track, oral presentation).

- [7] Qianlong Wen*, **Ruoqi Liu***, Ping Zhang, "Clinical connectivity map for drug repurposing: using laboratory results to bridge drugs and diseases", *BMC Medical Informatics and Decision Making*, 2021 (to appear).
- [8] **Ruoqi Liu**, Ping Zhang, "Towards early detection of adverse drug reactions: combining pre-clinical drug structures and post-market safety reports", *BMC Medical Informatics and Decision Making* 19:279, 2019.
- [9] Wen Zhang, Xiang Yue, Feng Huang, **Ruoqi Liu**, Yanlin Chen, FengHuang, Chunyang Ruan, "Predicting drug-disease associations and their therapeutic function based on the drug-disease associationbipartite network", *Methods* 145:51-59, 2018
- [10] Wen Zhang, Xiang Yue, Weiran Lin, Wenjian Wu, **Ruoqi Liu**, Feng Huang, Feng Liu, "Predicting drug-disease associations by using similarity constrained matrix factorization", *BMC Bioinformatics* 19:233, 2018

WORK EXPERIENCE

Pinterest Labs
Research Intern

San Francisco, CA
May - Aug 2022

- Research project of real-time user sequence study for personalized re-ranking in related pins.
- Explored transformer-based sequence models for encoding real-time user actions (i.e., click-through, re-pin, etc.) and corresponding time information (i.e., timestamp and duration).
- Achieved 2-3% improvement of important user engagement metrics in online evaluation.

SERVICES

- Conference sub reviewer: KDD, IJCAI, AAAI, ICML, NeurIPS, ICLR.
- Journal sub reviewer: Patterns, Nature Communication, Lancet Digital Health.
- Conference reviewer: SDM, AMIA.
- Journal reviewer: Bioinformatics, BMC Medical Informatics and Decision Making

HONORS & AWARDS

- Outstanding Graduates, WHU (top 10%) 2018
- Excellent Graduation Thesis Award, WHU (top 5%) 2018
- The First Prize Scholarship, three times, WHU 2015-2018

TECHNICAL SKILLS

GitHub: <https://github.com/ruoqi-liu>

- **Computer Languages:** Python, Java, MATLAB, MySQL
- **Library & Package:** PyTorch, TensorFlow, NumPy, Pandas, Scikit-learn,
- **Tools:** Git