

# JIASHUO LIU

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## EDUCATION

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### Tsinghua University

Phd. Student Advised by Prof. Peng Cui (GPA 3.97/4.0, Ranked 3<sup>rd</sup>)

Sep. 2020 – Present

Beijing, China

National Scholarship, 2021

### Tsinghua University

Bachelor of Computer Science and Technology (Ranked 11<sup>th</sup>, Top 6%)

Sep. 2016 – June 2020

Beijing, China

Excellent graduate of Tsinghua University, 2020

Excellent graduate of Department of Computer Science and Technology, Tsinghua University, 2020

## RESEARCH INTERESTS

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### Out-of-Distribution (OOD) Generalization Problem

I am working to develop algorithms with stable performances under agnostic distributional shifts, including Distributionally Robust Optimization methods and Invariant Learning methods. And I am now the maintainer of the OOD generalization paper list on page [http://out-of-distribution-generalization.com\(1w+ Pageviews\)](http://out-of-distribution-generalization.com(1w+ Pageviews)).

### Machine Learning and Causal Inference for Biology

with BGI Big Data Center

I am working to incorporate causal inference into machine learning to develop explainable and trustworthy algorithms for analysis of Single-Cell RNA Sequence data on COVID-19 and Alzheimer's Disease.

## PUBLICATIONS

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### Conference Papers | Accepted Conference Papers

- Jiashuo Liu**, Zheyuan Shen, Peng Cui, Linjun Zhou, Kun Kuang, Bo Li, and Yishi Lin. Stable adversarial learning under distributional shifts. In *Thirty-Fifth AAAI Conference on Artificial Intelligence, AAAI 2021*, pages 8662–8670. AAAI Press, 2021
- Jiashuo Liu**, Zheyuan Hu, Peng Cui, Bo Li, and Zheyuan Shen. Heterogeneous risk minimization. In Marina Meila and Tong Zhang, editors, *Proceedings of the 38th International Conference on Machine Learning, ICML 2021, 18-24 July 2021, Virtual Event*, volume 139 of *Proceedings of Machine Learning Research*, pages 6804–6814. PMLR, 2021
- Jiashuo Liu**, Zheyuan Hu, Peng Cui, Bo Li, and Zheyuan Shen. Kernelized heterogeneous risk minimization. In *35th Conference on Neural Information Processing Systems (NeurIPS 2021)*, Sydney, Australia.
- Jiashuo Liu**, Jiayun Wu, Bo Li, and Peng Cui. Distributionally robust optimization with data geometry. In *36th Conference on Neural Information Processing Systems (NeurIPS 2022)*.
- Zheyuan Shen, Peng Cui, **Jiashuo Liu**, Tong Zhang, Bo Li, and Zhitang Chen. Stable learning via differentiated variable decorrelation. In *KDD '20: The 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, Virtual Event, CA, USA, August 23-27, 2020*, pages 2185–2193. ACM, 2020
- Haoxin Liu, Ziwei Zhang, Peng Cui, Yafeng Zhang, Qiang Cui, **Jiashuo Liu**, and Wenwu Zhu. Signed graph neural network with latent groups. In *KDD '21: The 27th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, Virtual Event, Singapore, August 14-18, 2021*, pages 1066–1075. ACM, 2021
- Zimu Wang, Yue He, **Jiashuo Liu**, Wenchao Zou, Philip S Yu, and Peng Cui. Invariant preference learning for general debiasing in recommendation. In *Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2022*

### Journal Papers |

- Jiashuo Liu**, Zheyuan Shen, Peng Cui, Linjun Zhou, Kun Kuang, and Bo Li. Distributionally robust learning with stable adversarial training. *CoRR*, abs/2106.15791, 2021.(Minor Revision under *IEEE TKDE*)
- Zheyuan Shen\*, **Jiashuo Liu**\*, Yue He, Xingxuan Zhang, Renzhe Xu, Han Yu, and Peng Cui. Towards out-of-distribution generalization: A survey. *CoRR*, abs/2108.13624, 2021(\*:Equal Contributions, Submitted to *IEEE TPAMI*)
- Chongxuan Li, Kun Xu, **Jiashuo Liu**, Jun Zhu, and Bo Zhang. Triple generative adversarial networks. In *Transactions on Pattern Analysis and Machine Intelligence(IEEE TPAMI)*

## TEACHING & ACADEMIC SERVICE

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- Software Engineering (Fall 2019, 2020, 2021, 2022, Spring 2022, TA)
- Object-oriented Programming (Summer 2022, TA)
- Conference Reviewer: ICML (2022), UAI (2022), AAAI (2022), IJCAI (2022), CVPR (2022), CoLLAs (2022), AISTATS (2023)

## TECHNICAL SKILLS

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**Languages:** Python, Java, C/C++, JavaScript, Matlab

**Frameworks:** PyTorch, TensorFlow