

## RESEARCH INTEREST

My research focuses on developing principled machine learning algorithms using tools such as weak supervision and adversarial training. I am interested in natural language processing and point process.

## EDUCATION

2019 - present	Georgia Institute of Technology <b>Ph.D. in Machine Learning</b>
2015 - 2019	The University of Texas at Austin <b>B.S. in Computer Science (with Highest Honors)</b> <b>B.S. in Mathematics (with Highest Honors)</b>

## PUBLICATIONS

- **DiP-GNN: Discriminative Pre-Training of Graph Neural Networks**  
**Simiao Zuo**, Haoming Jiang, Qingyu Yin, Xianfeng Tang, Bing Yin and Tuo Zhao  
*arxiv*, 2022
- **Less is More: Task-guided Layer-wise Distillation for Language Model Compression**  
Chan Liang, **Simiao Zuo**, Qingru Zhang, Pengcheng He, Weizhu Chen and Tuo Zhao  
*arxiv*, 2022
- **Context-Aware Query Rewriting for Improving Users' Search Experience on E-commerce Websites**  
**Simiao Zuo**, Qingyu Yin, Haoming Jiang, Shaohui Xi, Bing Yin, Chao Zhang and Tuo Zhao  
*arxiv*, 2022
- **Differentially Private Estimation of Hawkes Process**  
**Simiao Zuo**, Tianyi Liu, Tuo Zhao and Hongyuan Zha  
*arxiv*, 2022
- **PLATON: Pruning Large Transformer Models with Upper Confidence Bound of Weight Importance**  
Qingru Zhang, **Simiao Zuo**, Chen Liang, Alexander Bukharin, Pengcheng He, Weizhu Chen and Tuo Zhao  
*International Conference on Machine Learning (ICML)*, 2022
- **MoEBERT: from BERT to Mixture-of-Experts via Importance-Guided Adaptation**  
**Simiao Zuo**, Qingru Zhang, Chen Liang, Pengcheng He, Tuo Zhao and Weizhu Chen  
*North American Chapter of the Association for Computational Linguistics (NAACL)*, 2022
- **Self-Training with Differentiable Teacher**  
**Simiao Zuo\***, Yue Yu\*, Chen Liang, Haoming Jiang, Siawpeng Er, Chao Zhang, Tuo Zhao and Hongyuan Zha  
*Findings of North American Chapter of the Association for Computational Linguistics (NAACL)*, 2022
- **Adversarially Regularized Policy Learning Guided by Trajectory Optimization**  
Zhigen Zhao, **Simiao Zuo**, Tuo Zhao and Ye Zhao  
*Annual Learning for Dynamics & Control Conference (L4DC)*, 2022

- **No Parameters Left Behind: Sensitivity Guided Adaptive Learning Rate for Training Large Neural Networks**  
Chen Liang, Haoming Jiang, **Simiao Zuo**, Pengcheng He, Xiaodong Liu, Jianfeng Gao, Weizhu Chen and Tuo Zhao  
*International Conference on Learning Representations (ICLR)*, 2022
- **Taming Sparsely Activated Transformer with Stochastic Experts**  
**Simiao Zuo**, Xiaodong Liu, Jian Jiao, Young Jin Kim, Hany Hassan, Ruofei Zhang, Tuo Zhao and Jianfeng Gao  
*International Conference on Learning Representations (ICLR)*, 2022
- **ARCH: Efficient Adversarial Regularized Training with Caching**  
**Simiao Zuo**, Chen Liang, Haoming Jiang, Pengcheng He, Xiaodong Liu, Jianfeng Gao, Weizhu Chen and Tuo Zhao  
*Findings of Empirical Methods in Natural Language Processing (EMNLP)*, 2021
- **Adversarial Regularization as Stackelberg Game: An Unrolled Optimization Approach**  
**Simiao Zuo**, Chen Liang, Haoming Jiang, Xiaodong Liu, Pengcheng He, Jianfeng Gao, Weizhu Chen and Tuo Zhao  
*Empirical Methods in Natural Language Processing (EMNLP)*, 2021
- **Super Tickets in Pre-Trained Language Models: From Model Compression to Improving Generalization**  
Chen Liang, **Simiao Zuo**, Minshuo Chen, Haoming Jiang, Xiaodong Liu, Pengcheng He, Tuo Zhao and Weizhu Chen  
*Association for Computational Linguistics (ACL)*, 2021
- **Fine-Tuning Pre-trained Language Model with Weak Supervision: A Contrastive-Regularized Self-Training Approach**  
Yue Yu\*, **Simiao Zuo**\*, Haoming Jiang, Wendi Ren, Tuo Zhao and Chao Zhang  
*North American Chapter of the Association for Computational Linguistics (NAACL)*, 2021
- **A Hypergradient Approach to Robust Regression without Correspondence**  
Yujia Xie\*, Yixiu Mao\*, **Simiao Zuo**, Hongteng Xu, Xiaojie Ye, Tuo Zhao and Hongyuan Zha  
*International Conference on Learning Representations (ICLR)*, 2021
- **Transformer Hawkes Process**  
**Simiao Zuo**, Haoming Jiang, Zichong Li, Tuo Zhao and Hongyuan Zha  
*International Conference on Machine Learning (ICML)*, 2020
- **Tensor maps for synchronizing heterogeneous shape collections**  
Qixing Huang, Zhenxiao Liang, Haoyun Wang, **Simiao Zuo** and Chandrajit Bajaj  
*ACM Transactions on Graphics (TOG)*, 2019

## PROFESSIONAL EXPERIENCES

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2022.10 - 2023.01    Research intern, Microsoft Research  
 2022.05 - 2022.07    Data scientist intern, Microsoft Bing Ads  
 2022.01 - 2022.04    Applied scientist intern, Amazon Search  
 2021.05 - 2021.07    Data scientist intern, Microsoft Bing Ads  
 2020.09 - 2020.12    Applied scientist intern, Amazon Search  
 2020.06 - 2020.08    Research intern, Microsoft Azure AI

I served as a reviewer for AAAI, AISTATS, COLING, ICLR, ICML, KDD and NeurIPS.

## TEACHING EXPERIENCES

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Teaching Assistant:

- Basic Statistical Methods (ISyE 3030), Fall 2019/Spring 2020

## REFERENCES

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<b>Tuo Zhao</b>	Assistant Professor H. Milton School of Industrial and Systems Engineering Georgia Institute of Technology Email: tourzhao@gatech.edu
<b>Hongyuan Zha</b>	X.Q. Deng Presidential Chair Professor, Executive Dean School of Data Science The Chinese University of Hong Kong, Shenzhen Email: zhahy@cuhk.edu.cn