SIMIAO ZUO

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WORK EXPERIENCES

2023.02 - present	Data scientist, Microsoft Bing Ads
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

EDUCATION

2019 - 2023 Georgia Institute of Technology
Ph.D. in Machine Learning

2015 - 2019 The University of Texas at Austin
B.S. in Computer Science (with Highest Honors)
B.S. in Mathematics (with Highest Honors)

PUBLICATIONS

- **Efficient Long Sequence Modeling via State Space Augmented Transformer**
  Simiao Zuo*, Xiaodong Liu*, Jian Jiao, Denis Charles, Eren Manavoglu, Tuo Zhao and Jianfeng Gao
  In submission, 2023
- **DiP-GNN: Discriminative Pre-Training of Graph Neural Networks**
  Simiao Zuo, Haoming Jiang, Qingyu Yin, Xianfeng Tang, Bing Yin and Tuo Zhao
  In submission, 2023
- **Differentially Private Estimation of Hawkes Process**
  Simiao Zuo, Tianyi Liu, Tuo Zhao and Hongyuan Zha
  In submission, 2023
- **Sentinel: A Fine-Grained, Online Advanced Persistent Threats Detector with Transformer**
  Yajie Zhou, Nengneng Yu, **Simiao Zuo**, Yue Yu, Haoming Yi, Chao Zhang, Tuo Zhao and Zaoxing Liu
  In submission, 2023
- **Robust Multi-Agent Reinforcement Learning via Adversarial Regularization: Theoretical Foundation and Stable Algorithms**
  Alexander Bukharin, Yan Li, Yue Yu, Qingru Zhang, Zhehui Chen, **Simiao Zuo**, Chao Zhang, Songan Zhang and Tuo Zhao
  In submission, 2023
- **DeepTagger: Knowledge Enhanced Named Entity Recognition for Web-Based Ads Queries**
  Simiao Zuo, Pengfei Tang, Xinyu Hu, Qiang Lou, Jian Jiao and Denis Charles
  Conference on Information and Knowledge Management (CIKM), 2023
- **SMURF-THP: Score Matching-based UnceRtainty quantiFication for Transformer Hawkes Process**
  Zichong Li, Yanbo Xu, **Simiao Zuo**, Haoming Jiang, Tuo Zhao and Hongyuan Zha
  International Conference on Machine Learning (ICML), 2023

- **Machine Learning Force Fields with Data Cost Aware Training**
  Alexander Bukharin, Tianyi Liu, Shengjie Wang, **Simiao Zuo**, Weihao Gao, Wen Yan and Tuo Zhao
  International Conference on Machine Learning (ICML), 2023
- **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
  International Conference on Machine Learning (ICML), 2023
- **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
  Association for Computational Linguistics, Industry Track (ACL), 2023
- **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

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.

Teaching Experiences

Teaching Assistant:

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

References

Tuo Zhao
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