Yaning Jia

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Address:1037 Luoyu Road, Wuhan, China, Huazhong University of Science and Technology

Research interests

Deep learning, Machine Learning, NLP, Trustworthy AI, fairness

Education

Huazhong University with Science and Technology CN
Master student in Cyber Space Sep. 2021 – Present
Advisor: Prof. Dongmian Zou

Northeastern University CN
Bachelor of Science, Computer Science Sep. 2017 – Jun. 2021
Outstanding Honor Thesis Award
GAP: 4.0

Publications

Enhancing Node-Level Adversarial Defenses by Lipschitz Regularization of Graph Neural Networks
Yaning Jia, Dongmian Zou, Hongfei Wang, Hai Jin.
*The 29th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (**KDD**), 2023*

Stabilizing GNN for Fairness via Lipschitz Bounds
Yaning Jia, Chunhui Zhang.
*New Frontiers in Adversarial Machine Learning **(AdvML@ICML)**, 2023*

Aligning Relational Learning with Lipschitz Fairness
Yaning Jia, Chunhui Zhang, Soroush Vosoughi.
On Submission (ICLR 2024, average score:6.25) & Extension on AdvML@ICML'23 paper

Research experience

Research Assistant Jun. 2022-Mar. 2023

Duke University and Duke Kunshan University, US, China
Mentors: Professor Dongmian Zou
Developed a pioneering framework for deep neural networks based on the Lipschitz property, significantly enhancing model stability and robustness against adversarial attacks and noisy data. This innovative approach can be integrated as a plug-in component to bolster the overall robustness of various neural network models.

Research Assistant May 2023- Aug. 2023
Zhejiang Lab, National Lab at Hangzhou, China
Mentors: Professor Hongyang Chen
Engineered a Transformer SVD algorithm specifically designed for large-scale graph pre-training tasks. This innovative solution effectively reduces the trainable parameters in large-scale models, maintaining high performance while significantly decreasing GPU memory requirements. This advancement streamlines the efficiency of large-scale model pre-training, marking a notable improvement in both resource utilization and processing speed.

Research Assistant Aug. 2023-Present. 2023
Dartmouth College, US
Mentors: Professor Soroush Vosoughi, Chunhui Zhang
Crafted an innovative method to instill individual fairness in deep neural networks, outperforming existing methods in efficiency and effectiveness. This groundbreaking approach integrates seamlessly into network models, substantially boosting individual fairness without compromising on performance, and operates with a reduced time cost.

Skills

Programming Skills: C++, Python, java, PyTorch, MATLAB, Git, PyG, DGL.
Operating System: Linux

Activities

Conference official reviewer
ICML2023 workshop, KDD2023 workshop ,and NeuIPS 2023 workshop