(+1) 551-2909454
Newark, NJ
tabzhangjx@gmail.com

Jiaxing Zhang

Final Year PhD Student

https://tabzhangjx.github.io/
github.com/jz48
linkedin.com/in/jiaxing-zhang-45593b156

Education

PhD student in Informatics, *New Jersey Institute of Technology, NJ, US* — Sep. 2020 — Jul.2025
Bachelor of Computer Science, *Xi'an Jiaotong University, Shaanxi, China* — Sep. 2016 — Jul.2'020
Exchange student in University of Minnesota Twin Cities, MN, US — Jan. 2019 — Jul. 2019
Summer School in University of Alberta, Edmonton, Alberta, Canada — Jul. 2017 — Aug. 2017

Publications and Research Experience

PhD Student / Explainable AI on Graph Neural Network — **Sep. 2022 — Present**
New Jersey Institute of Technology, Lab DaRL, under the supervision of Dr. Hua Wei — *Newark, NJ, US*

- LLMExplainer: Large Language Model based Bayesian Inference for Graph Explanation Generation. 2024. Under review.
  - We propose a new and general framework, LLMExplainer, which solves the problem of learning bias in the graph explanation process by embedding the Large Language Model into the graph explainer with a Bayesian inference process and improves the explanation accuracy.
- [ICML'24] Interpreting Graph Neural Networks with In-Distributed Proxies.
  - We expand the non-parametric graph mix-up approach into parametric graph generation in this work with Graph Auto-Encoder (GAE) and Variational Graph Auto-Encoder (VGAE). We evaluate our ProxyExplainer over both synthetic and real-world datasets.
- [SIGKDD'23] MixupExplainer: Generalizing Explanations for Graph Neural Networks with Data Augmentation.
  - In this work, we address the Out-Of-Distribution problem lying in the explainability of graph classification tasks. We propose the MixupExplainer, which is an explainer-agnostic and model-agnostic framework to explain the behavior of Graph Neural Networks on graph input samples.
- [LoG'23] RegExplainer: Generating Explanations for Graph Neural Networks in Regression Task.
  - We adopt the Graph Information Bottleneck from classification tasks into regression tasks by introducing the contrastive learning approach into the explainer framework. We adopt the mutual information with InfoNCE and combine the objective function with the mix-up approach.

PhD Student / Natural Language Processing — **Sep. 2020 — Jul. 2022**
New Jersey Institute of Technology, SPACE Lab — *Newark, NJ, US*

- [ESEC/FSE'23] Commit-level, Neural Vulnerability Detection and Assessment.
  - We work on code analysis within the domain of software engineering. Our work includes vulnerability detection, bug detection, notation/code completion, and code analysis, with the usage of a). large language model (LLM)/pre-trained language model (PLM); b). Code parsing, Code graph building, including AST/CFG/DFG/PDG on java/c/c++/python, etc.; c). Embedding Technologies, including BERT, CodeBERT, Word2Vec, etc. d). Big data (large code/text corpus) collecting, cleaning, and processing. We build the model, pre-train it or fine-tune it from the public large model, and integrate it with the sub-models to address the downstream tasks.
- [ESEC/FSE'23] DeMinify: Neural Variable Name Recovery and Type Inference.

Services

Serve as the reviewer of SIGKDD
Serve as the reviewer of PKDD
President of Chinese Students and Scholars Association (CSSA) @ New Jersey Institute of Technology (NJIT) — 2023 — present

Skills

Tools and Languages	Python, C/C++, Java, C#, JavaScript, PyTorch, TensorFlow, Matlab, Anaconda, Docker, Linux, Git, LaTeX, Markdown
Machine Learning	Natural Language Processing, Code Analysis, Graph Neural Network, Explainable AI, Information Theory, Time Series, Spatio-Temporal Graph, Traffic Flow Prediction
Communication	English, Chinese