Jinming Xing

jmxing0000@gmail.com | 201-927-1095 | [Website] | [Google Scholar]

EDUCATION

North Carolina State University   **Sep 2023 – Present**
- Ph.D. in Computer Science.
- **Research Interest:** Machine Learning, Deep Learning, Large Language Models

Shenzhen University   **Sep 2019 – Jun 2023**
- B.S. in Computer Science. GPA: 3.92/4.
- **Coursework:** Probabilities, Linear Algebra, Data Structures and Algorithms, Computer Networks, Internet of Things, Cloud Computing, Database, Machine Learning, Practical Deep Learning, Computer Vision.

SKILLS

- Python, C/C++, PyTorch, Hadoop, Spark, Flask, MySQL, Numpy, Pandas, Scikit-learn, Matplotlib, Seaborn
- ML (classification, regression, clustering), DL (CNNs, RNNs, GNNs, Transformers, LLM).

RESEARCH EXPERIENCE

Research Assistant (NCSU)   **Oct 2023 – Now**

Global-Local Spatial-Temporal Aware Graph Attention Network for Network Traffic Forecasting
- A dynamic data-driven spatial-temporal graph was proposed to capture hidden spatial-temporal dependencies.
- Proposed GLSTaGAT, which copes with global-local spatial-temporal patterns simultaneously. A simple yet effective learnable pooling was designed, and to speed up the convergence, node normalization was proposed.
- An encoder-only transformer was adopted while GAT servers as the graph convolution backbone.
- GLSTaGAT outperforms the average of baselines by 36.37% (MAE), 32.19% (RMSE), and 23.99% (SMAPE).
- Technologies: Spatial-Temporal GNN, Dynamic Time Wrapping, Transformer, Attention Mechanism.

A Reinforcement Learning Framework for Application-Specific TCP Congestion-Control
- Proposed ASC_{RL}, a DRL-based framework that can accommodate clients with various optimization goals.
- Designed a client-server updating mechanism, which decouples the training and inference, reducing the client computational load by up to 91%, making it suitable to be deployed on low-power devices.
- Introduced a fast retraining mechanism for client goals changing, resulting in a 50% reduced retraining time.
- Technologies: PyTorch, DRL, TCP, Network Simulation (NS3), Network Topologies.

Research Assistant (SZU)   **Jun 2021 – Jul 2023**

Open-World Semi-Supervised Learning Based on Fuzzy Rough Sets
- Proposed a novel sample center identifying method using one-vs-rest strategy and Fuzzy Rough Sets.
- Introduced a one-stage learning strategy for adaptively and iteratively labeling data and classifying them.
- Conducted extensive experiments on artificial and real datasets demonstrating the model's effectiveness.
- Technologies: Open-World Classification, Curriculum Learning, Group Finding.

Weighted Fuzzy Rough Sets-based Tri-Training and Its Application to Medical Diagnosis
- Proposed the 'bad-point' technique for dataset de-noising and a high-order information extraction strategy.
- Three modal data 'ORI', 'PCA', and 'DIS' are proposed to initialize tri-training base classifiers.
- Designed a robust weighted fuzzy lower approximation classifier for supervised and semi-supervised problems.
- Technologies: Multi-Modal Learning, Semi-Supervised Learning, Noise Learning, Fuzzy Rough Sets.

SERVICES

- Teaching Assistant: Computer Network (Grad), Data Structures and Algorithms (Undergrad)
- WWW25 Reviewer