# Jinming Xing

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## Education

**North Carolina State University** **Sep 2023 – Present**

- Ph.D. in Computer Science.
- **Research Interest:** Machine Learning, Deep Learning, Large Language Models, Internet of Things

**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

**Programming Language & Frameworks:** Python, C/C++, Java, PyTorch, OpenCV, Flask, NS3, Git, MySQL.
**Data Analysis and Visualization:** Numpy, Pandas, Scikit-learn, Matplotlib, Seaborn, Knowledge of common ML (classification, regression, clustering), DL (CNNs, RNNs, GNNs, DRL, Transformers), Web Crawler.

## Research Experience

**Research Assistant (NCSU)** **Oct 2023 – May 2024**

**Unified User-specific DRL Framework for TCP Congestion Control on Low Power Devices**

- Developed the UUDRL framework for TCP congestion control, offering users the choice to choose and alter their optimization goals (maximize throughput, minimize latency, or optimize the user-defined.).
- Proposed a client server style updating mechanism, reducing client computational load by up to 91%.
- Introduced a fast retraining mechanism for user goals change, leading to a 50% reduced retraining time.
- Technologies: Deep Reinforcement Learning, 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.
- Technologies: Open-world Classification, Curriculum Learning, Group Finding, Information Extraction.

**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.

## Projects

**Multi-user Chat Room with Chatbot** (http://app.yushen.space/chatbot)

- Designed and implemented a multi-user chat room with AES encryption and Anonymity support.
- Deployed a chatbot, which provides customized prompts and better memory retrieval with fewer tokens.
- Collected and summarized information from the internet lively, enhancing the chatbot with live information.
- Tools: Retrieval-Augmented Generation, Prompt Engineering, Flask, TCP/UDP, AES, MySQL, Selenium.

**A Multi-granularity Weighted Property Investment Model Based on ARIMA and LSTM**

- Implemented a web crawler using Requests, BeautifulSoup, and Pandas to download and preprocess data.
- Designed a weighted model combining ARIMA and LSTM using linear programming for stock selection.
- Leveraged various granularity (month, day, hour) data, increasing 8% accuracy, yielding 200% stock revenue.
- Tools: PyTorch, Scikit-learn, Regression, Regularization, Linear Programming, Web Crawler, JSON, Matlab.