Yingxue Zhang

77 Elm Street, Worcester, MA 01609

+1 551-263-9462 • yzhang31@wpi.edu

Summary

Ph.D. candidate in Data Science, with strong deep learning background and programming skills and the ability to work independently or as part of a research team. Broad research interests include:

- deep learning
- meta-learning
- reinforcement learning
- imitation Learning
- spatial-temporal data mining
- big data analysis

Education

Worcester Polytechnic Institute (WPI) — Worcester, MA
Ph.D. Candidate in Data Science. GPA 4.0/4.0 — *Expected 2022*

Stevens Institute of Technology — Hoboken, NJ
M.S in Financial Engineering (Data Science Track). GPA 3.98/4.0 — *2016-2018*

Shanghai Jiao Tong University — Shanghai, China
B.E in Computer Science — *2012-2016*

Work Experience

Nuro, Behavior ML Team — Mountain View, CA
Machine Learning Engineer Intern — *May 2021-Aug 2021*

- Designed and developed new models for trajectory prediction and behavior planning for autonomous vehicles.

Worcester Polytechnic Institute — Worcester, MA
Teaching Assistant — *Aug 2020-Present*

- Assisted in teaching graduate courses including Reinforcement Learning and Database Management Systems.

Research Experience

Worcester Polytechnic Institute, Data Science Research Group — Worcester, MA
Research Assistant — *Aug 2018-Present*
Funded by National Science Foundation

- Proposed to combine generative adversarial networks with transfer learning framework in multiple source cities setup to solve the traffic estimation problem in a city suffering data scarcity.
- Proposed C^3-GAN which provides good embeddings for complex conditions through unique architecture and algorithm and thus solves the complex-condition-controlled generation problem.
- Proposed a Continuous Spatial-Temporal Meta-Learning algorithm which employed variational inference and deep neural networks to better capture the temporal uncertainties of time series data.
- Proposed Curb-GAN which equipped with dynamic convolutional layer and self-attention mechanism to solve the spatial-temporal estimation problem.
- Designed a novel generative adversarial networks to better capture the spatial patterns of spatial-temporal data.

Technical Skills

- **Programming:** Python, R, C/C++, Java
- **Frameworks:** PyTorch, TensorFlow, scikit-learn, NumPy, SciPy
- **Others:** LaTeX, Matlab, SQL

Publications

- **[TIST] Yingxue Zhang**, Yanhua Li, Xun Zhou, Jun Luo and Zhi-Li Zhang. Urban Traffic Dynamics Prediction — A Continuous Spatial-Temporal Meta-Learning Approach. In ACM Transactions on Intelligent Systems and Technology.

- [**TIST**] Gan Bao, Xun Zhou, **Yingxue Zhang**, Yanhua Li, and Yiqun Xie. COVID-GAN+: Estimating Human Mobility Responses to COVID-19 through Spatio-Temporal Generative Adversarial Networks with Enhanced Features. In ACM Transactions on Intelligent Systems and Technology.
- [**KDD**] **Yingxue Zhang**, Yanhua Li, Xun Zhou, Xiangnan Kong and Jun Luo. Curb-GAN: Conditional Urban Traffic Estimation through Spatio-Temporal Generative Adversarial Networks. In Proceedings of the 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD '20).
- [**ICDM**] **Yingxue Zhang**, Yanhua Li, Xun Zhou and Jun Luo. cST-ML: Continuous Spatial-Temporal Meta-Learning for Traffic Dynamics Prediction. 2020 IEEE International Conference on Data Mining (ICDM).
- [**ICDM**] **Yingxue Zhang**, Yanhua Li, Xun Zhou, Xiangnan Kong and Jun Luo. TrafficGAN: Off-Deployment Traffic Estimation with Traffic Generative Adversarial Networks. 2019 IEEE International Conference on Data Mining (ICDM).
- [**TBD**] **Yingxue Zhang**, Yanhua Li, Xun Zhou, Xiangnan Kong and Jun Luo. Off-Deployment Traffic Estimation — A Traffic Generative Adversarial Networks Approach. In IEEE Transactions on Big Data.
- [**SIGSPATIAL GIS'20**] Han Bao, Xun Zhou, **Yingxue Zhang**, Yanhua Li, Yiqun Xie. COVID-GAN: Estimating Human Mobility Responses to COVID-19 Pandemic through Spatio-Temporal Conditional Generative Adversarial Networks.In Proceedings of the 28th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems.

Conference & Presentation Experience

2020 IEEE International Conference on Data Mining (ICDM) — Virtual Event
Conference Presentor — *Nov 2020*

26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD '20) — Virtual Event
Conference Presentor — *Aug 2020*

2019 IEEE International Conference on Data Mining (ICDM) — Beijing, China
Conference Presentor — *Nov 2019*

Graduate Research Innovation Exchange (GRIE) — Worcester, MA
Poster Presentor — *Feb 2019*

Awards

ICDM 2020 Student Travel Award — 2020

Graduate Fellowship by National Science Foundation — 2018-Present

Scholarship for international students from Stevens Institute of Technology — 2016-2018