

# Yingxue Zhang

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## 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)

Ph.D. Candidate in Data Science. GPA 4.0/4.0

Worcester, MA

Expected 2022

### Stevens Institute of Technology

M.S in Financial Engineering (Data Science Track). GPA 3.98/4.0

Hoboken, NJ

2016-2018

### Shanghai Jiao Tong University

B.E in Computer Science

Shanghai, China

2012-2016

## Research & Work Experience

### Worcester Polytechnic Institute, Laboratory of Prof. Yanhua Li

Research Assistant

Worcester, MA

Aug 2018-Present

Funded by National Science Foundation

- Combined the meta reinforcement learning with meta imitation learning to enable learning of new behaviours (in progress).
- Proposed a Continuous Spatial-Temporal Meta-Learning algorithm (cST-ML) which employed variational inference and deep neural networks to better capture the temporal uncertainties of time series data.
- Proposed a novel generative adversarial networks 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.

### Worcester Polytechnic Institute, Data Science Research Group

Research Member

Worcester, MA

Aug 2018-Present

- Supervised research projects of graduate students on human mobility estimation with conditional generative adversarial networks.
- Assisted other research members in solving research issues related to deep learning and large-scale data analytics.

### Stevens Institute of Technology

Teaching Assistant

Hoboken, NJ

Aug 2017-May 2018

- Assisted in teaching graduate courses including Data Mining and Database Management.

## Technical Skills

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

## Publications

- **[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

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<b>26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD '20)</b> <i>Conference Presentor</i>	Virtual Event Aug 2020
<b>2019 IEEE International Conference on Data Mining (ICDM)</b> <i>Conference Presentor</i>	Beijing, China Nov 2019
<b>Graduate Research Innovation Exchange (GRIE)</b> <i>Poster Presentor</i>	Worcester, MA Feb 2019

## Awards

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<b>Graduate Fellowship by National Science Foundation</b>	2018-Present
<b>Scholarship for international students from Stevens Institute of Technology</b>	2016-2018