

# MENGXI WU

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## EDUCATION

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<b>University of Southern California</b> Doctor of Philosophy, Computer Science	Expected 2027.5
<b>University of Southern California</b> Master of Arts, Mathematics	Expected 2026.5
<b>New York University</b> Master of Science, Computer Science	2021.5
<b>University of Michigan, Ann Arbor</b> Bachelor of Science in Engineering, Electrical Engineering	2019.5

## PUBLICATIONS

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**Mengxi Wu**, Hao Huang, Yi Fang, Mohammad Rostami. “Curvature Diversity-Driven Deformation and Domain Alignment for Point Cloud.” *Submitted*

**Mengxi Wu**, Mohammad Rostami. “Graph Harmony: Denoising and Nuclear-Norm Wasserstein Adaptation for Enhanced Domain Transfer in Graph-Structured Data.” *Transactions on Machine Learning Research 2024*

**Mengxi Wu**, Yi-Jen Chiang, Christopher Musco. “Streaming Approach to In Situ Selection of Key Time Steps for Time-Varying Volume Data.” *Eurographics/IEEE Conference on Visualization 2022*

**Mengxi Wu**, Hao Huang, Yi Fang. “3D Point Cloud Completion with Geometric-Aware Adversarial Augmentation.” *International Conference on Pattern Recognition 2022*

## RESEARCH EXPERIENCE

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**USC Information Science Institute** Present  
*PhD Student, Advised by Prof. Xuezhe Ma*

- Conducted research on theoretical foundations of training large language models (LLMs), focusing on optimizers and the theory of hyperparameter optimizations.

**NYU Multimedia and Visual Computing Lab** 2021.3 - 2022.5  
*Research Assistant, Advised by Prof. Yi Fang*

- Conducted research on geometric-aware adversarial training methods for 3D point cloud completion.
- Designed a novel adversarial attack method that constrains adversarial perturbations with absolute minimum curvature direction of original data and published the results on ICPR 2022.

**NYU Algorithms and Foundations Group** 2020.6 - 2022.4  
*Research Assistant, Advised by Prof. Yi-Jen Chiang and Prof. Christopher Musco*

- Conducted research on in situ selection of key time steps for high dimensional time-varying data.
- Developed a new greedy algorithm with numerical linear algebra techniques to compute linear interpolation solutions and errors in an online streaming fashion and published the results on EuroVis 2022.

## WORK EXPERIENCE

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**Huawei**

2021.9 - 2022.5

*Algorithm Engineer, Network AI Engine Department*

- Developed intelligent systems to detect fire, smoke, and helmet in 2D images captured from cameras on construction sites.
- Adjusted and trained the state-of-the-art 2D object detection models (e.g., YOLOR, YOLOX).
- Integrated detection models with techniques such as Knowledge Distillation and Memory Replay to enable class-incremental learning.

## **TEACHING EXPERIENCE**

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**CSCI 544: Applied Natural Language Processing**

*Teaching Assistant, University of Southern California*

**CSCI 570: Analysis of Algorithms**

*Teaching Assistant, University of Southern California*

**ECE-GY 9123: Deep Learning**

*Teaching Assistant, New York University*

## **SERVICES**

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**Conference Reviewing**

EMNLP 2023, ICLR 2025

**Journal Reviewing**

Transactions on Machine Learning Research

## **TECHNICAL SKILLS**

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**Programming Languages**

C/C++, Python, Java, R, MATLAB, Swift

**Libraries and Tools**

PyTorch, Tensorflow, PySpark, Hadoop