

MENGXI WU

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EDUCATION

University of Southern California Doctor of Philosophy, Computer Science	2027.5
University of Southern California Master of Arts, Applied Mathematics	2027.5
New York University Master of Science, Computer Science	2021.5
University of Michigan, Ann Arbor Bachelor of Science in Engineering, Electrical Engineering, GPA	2019.5

PUBLICATIONS

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

USC Information Science Institute 2022.6 - 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

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

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

Conference Reviewing

EMNLP 2023, ICLR 2025

Journal Reviewing

Transactions on Machine Learning Research

TECHNICAL SKILLS

Programming Languages

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

Libraries and Tools

PyTorch, Tensorflow, PySpark, Hadoop