# MENGXI WU

website ◇ mengxiwu@usc.edu

## EDUCATION

**University of Southern California** Expected 2027.5
Doctor of Philosophy, Computer Science

**University of Southern California** Expected 2026.5
Master of Arts, Pure Mathematics

**New York University** 2021.5
Master of Science, Computer Science

**University of Michigan, Ann Arbor** 2019.5
Bachelor of Science in Engineering, Electrical Engineering

## PUBLICATIONS

Kyle R. Chickering*, Huijuan Wang*, **Mengxi Wu***, Alexander Moreno, Muhao Chen, Xuezhe Ma, Daria Soboleva, Joel Hestness, Zhengzhong Liu, Eric P. Xing. "GQA-$\mu$P: The Maximal Parameterization Update for Grouped Query Attention and Fully Sharded Data Parallel." *submitted*

**Mengxi Wu**, Hao Huang, Yi Fang, Mohammad Rostami. "Curvature Diversity-Driven Deformation and Domain Alignment for Point Cloud." *Transactions on Machine Learning Research 2025*

**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** 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.

**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.

## 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.
- 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, ICLR

**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 |