

Mengxi Wu

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 wmx567.github.io

EDUCATION

University of Southern California
Doctor of Philosophy, Computer Science

Expected 2027.12

University of Southern California
Master of Arts, Pure Mathematics

Expected 2027.5

New York University
Master of Science, Computer Science

2021.5

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

2019.5

EXPERIENCE

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

Present

- Conducted research on efficient pre-training of large language models (LLMs) and understanding the mathematical principles underlying training dynamics, including the hyperparameter optimization and optimizers.

Huawei

2021.9 - 2022.5

Machine Learning 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.

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.

PUBLICATIONS

(* indicates equal contribution.)

- Ehsan Hallaji, Alireza Fathalizadeh, **Mengxi Wu**, Mohammad Rostami, Roozbeh Razavi-Far. “*Towards Self-Adaptive Learning: Continual Learning under Harsh Conditions.*”

Submitted

- Xuezhe Ma*, Shicheng Wen*, Linghao Jin*, Bilge Acun*, Ruihang Lai*, Bohan Hou, Will Lin, Hao Zhang, Songlin Yang, Ryan Lee, **Mengxi Wu**, Jonathan May, Luke Zettlemoyer, Carole-Jean Wu. “*Gecko: An Efficient Neural Architecture Inherently Processing Sequences with Arbitrary Lengths.*”

Preprint

5. Kyle R. Chickering*, Huijuan Wang*, **Mengxi Wu***, Alexander Moreno, Muhan Chen, Xuezhe Ma, Daria Soboleva, Joel Hestness, Zhengzhong Liu, Eric P. Xing. “*GQA- μ P: The Maximal Parameterization Update for Grouped Query Attention and Fully Sharded Data Parallel.*”
Submitted
4. **Mengxi Wu**, Hao Huang, Yi Fang, Mohammad Rostami. “*Curvature Diversity-Driven Deformation and Domain Alignment for Point Cloud.*”
Transactions on Machine Learning Research 2025
3. **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
2. **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
1. **Mengxi Wu**, Hao Huang, Yi Fang. “*3D Point Cloud Completion with Geometric-Aware Adversarial Augmentation.*”
International Conference on Pattern Recognition 2022

TEACHING

University of Southern California

CSCI 544 Applied Natural Language Processing, *Teaching Assistant*
CSCI 570 Analysis of Algorithms, *Teaching Assistant*

New York University

ECE-GY 9123 Deep Learning, *Teaching Assistant*

SERVICES

Conference Reviewing

EMNLP, ICLR, ICML

Journal Reviewing

Transactions on Machine Learning Research

SKILLS

Programming Languages

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

Libraries and Tools

PyTorch, Tensorflow, PySpark, Hadoop