Mengmeng Ma

Ph.D. Student, University of Delaware

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RESEARCH INTERESTS

My research focuses on advancing machine learning robustness and explainability, specifically:

- **Multimodal Learning**: Missing Modality Learning.
- **Federated Learning**: Out-of-federation Generalization.
- **Explainable Machine Learning**: Rationale Prediction.

EDUCATION

University of Delaware — *Newark, DE, USA*
Ph.D. in Computer Science — *August 2020 - Present*

University of Southern California — *Los Angeles, CA, USA*
M.S. in Electrical Engineering — *May 2019*

Northwest A&F University — *Shaanxi, China*
B.Eng. in Electrical Engineering — *June 2016*

EXPERIENCE

Deep Robust & Explainable AI Lab (Deep-REAL), University of Delaware — *Newark, DE, USA*
Research Assistant. — *September 2019 - Present*

- Topology-aware Federated Learning for Generalization to Unseen Clients [**ICML'24**]
- Multimodal Learning With Missing Modalities [**AAAI'21, CVPR'22**]

Computer & Information Sciences Department, University of Delaware — *Newark, DE, USA*
Teaching Assistant. — *August 2020 - May 2022*

- CISC 683/483 (Data Mining), Fall 2020-2021, Spring 2021-2022
- CISC 642/442 (Computer Vision), Fall 2020

PUBLICATIONS

Refereed Conference Proceedings Articles

C.5 T. Li, **M. Ma**, and X. Peng, "DEAL: Disentangle and Localize Concept-level Explanations for VLMs." In: *Proceedings of the European Conference on Computer Vision (**ECCV**)*, 2024.

C.4 **M. Ma**, T. Li, and X. Peng, "Beyond the Federation: Topology-aware Federated Learning for Generalization to Unseen Clients." In: *Proceedings of the International Conference on Machine Learning (**ICML**)*, 2024.

C.3 T. Li, F. Qiao, **M. Ma**, and X. Peng, "Are Data-driven Explanations Robust Against Out-of-distribution Data?." In: *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2023.

C.2 **M. Ma**, J. Ren, L. Zhao, D. Testuggine, and X. Peng, "Are Multimodal Transformers Robust to Missing Modality?." In: *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2022.

C.1 **M. Ma**, J. Ren, L. Zhao, S. Tulyakov, C. Wu, and X. Peng, "SMIL: Multimodal Learning With Severely Missing Modality." In: *Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI**)*, 2021.

HONORS AND AWARDS

2024 **Department Travel Award for Outstanding Conference Publications**
$2,500 Travel Grant Awarded by Computer & Information Sciences Department at the University of Delaware

2022 **University Professional Development Award**
$3,000 Travel Grant Awarded by University of Delaware Graduate College

2021 **Distinguished Graduate Student Award**
Computer & Information Sciences Department at the University of Delaware

PROFESSIONAL SERVICES

Conference Program Committee/Reviewer

- Annual Conference on Neural Information Processing Systems (NeurIPS), 2024
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023 – 2024
- International Conference on Computer Vision (ICCV), 2023
- European Conference on Computer Vision (ECCV), 2024
- British Machine Vision Conference (BMVC), 2024
- Asian Conference on Computer Vision (ACCV), 2024
- ACM International Conference on Multimedia (ACM MM), 2019 – 2024

Journal Reviewer

- ACM Computing Surveys
- Neural Networks