

MENGMENG MA

PH.D. STUDENT, UNIVERSITY OF VIRGINIA

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RESEARCH INTERESTS

My research advances AI capability and interpretability by developing models that:

- Are robust against missing modalities [CVPR'22](#) [AAAI'21](#)
- Make the correct predictions for the correct reasons [ICML'25](#) [NeurIPS'24](#) [ECCV'24](#)
- Generalize to unseen data while respecting data privacy [ICML'24](#)

EDUCATION

University of Virginia

Ph.D. in Computer Science

Charlottesville, VA, USA

January 2026 - Present

University of Delaware

Ph.D. in Computer Science

Newark, DE, USA

August 2020 - December 2025

University of Southern California

M.S. in Electrical Engineering

Los Angeles, CA, USA

May 2019

Northwest A&F University

B.Eng. in Electrical Engineering

Xi'an, Shaanxi, China

June 2016

EXPERIENCE

Deep Robust & Explainable AI Lab, University of Virginia

Research Assistant. Advised by Prof. Xi Peng

Charlottesville, VA, USA

January 2026 - Present

- Verifiable AI for Cancer Diagnosis
- Interpretable Medical Image Analysis
- Multimodal Learning with Missing Modalities

Department of Radiology, Memorial Sloan Kettering Cancer Center

Visiting Graduate Research Assistant. Hosted by Prof. Binsheng Zhao and Prof. Oguz Akin

New York, NY, USA

December 2025 - Present

- Verifiable AI for Early-stage Prostate Cancer Diagnosis

Deep Robust & Explainable AI Lab, University of Delaware

Research Assistant. Advised by Prof. Xi Peng

Newark, DE, USA

September 2019 - December 2025

- Interpretable Medical Image Analysis
- Robust Federated Learning for Generalization to Unseen Clients
- Multimodal Learning With Missing Modalities

Department of Computer & Information Sciences, University of Delaware

Teaching Assistant

Newark, DE, USA

August 2020 - May 2022

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

PUBLICATIONS

Refereed Conference Proceedings Articles

- C.10 Ma, M., Peng, Y., Li, T., Lin, L., Beylergil, V., Zhao, B., Akin, O. & Peng, X., "Medical AI Encodes a 'Feeling of Error': Verifying Cancer Segmentation via Internal Concepts." In: Proceedings of the European Conference on Computer Vision (ECCV), 2026.

- C.9 Li, T., Chen, Y., **Ma, M.** & Peng, X., "*Inside the Visual Mind: Neuroscience-Motivated Concept Circuits for Interpreting and Steering Vision Transformers.*" In: Proceedings of the International Conference on Machine Learning (**ICML**), 2026.
- C.8 Peng, Y., **Ma, M.**, Yao, Z. & Peng, X., "*Inside-Out: Measuring Generalization in Vision Transformers Through Inner Workings.*" In: Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2026.  **Highlight**
- C.7 **Ma, M.**, Li, T., Peng, Y., Lin, L., Beylergil, V., Zhao, B., Akin, O. & Peng, X., "*Why Is There a Tumor?: Tell Me the Reason, Show Me the Evidence.*" In: Proceedings of the International Conference on Machine Learning (**ICML**), 2025.
- C.6 Li, T., **Ma, M.** & Peng, X., "*Beyond Accuracy: Ensuring Correct Prediction With Correct Rationale.*" In: Proceedings of the Conference on Neural Information Processing Systems (**NeurIPS**), 2024.
- C.5 Li, T., **Ma, M.** & Peng, X., "*DEAL: Disentangle and Localize Concept-level Explanations for VLMs.*" In: Proceedings of the European Conference on Computer Vision (**ECCV**), 2024.  **Strong Double Blind**
- C.4 **Ma, M.**, Li, T. & Peng, X., "*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 Li, T., Qiao, F., **Ma, M.** & Peng, X., "*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 **Ma, M.**, Ren, J., Zhao, L., Testuggine, D. & Peng, X., "*Are Multimodal Transformers Robust to Missing Modality?.*" In: Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2022.
- C.1 **Ma, M.**, Ren, J., Zhao, L., Tulyakov, S., Wu, C. & Peng, X., "*SMIL: Multimodal Learning With Severely Missing Modality.*" In: Proceedings of the AAAI Conference on Artificial Intelligence (**AAAI**), 2021.

HONORS AND AWARDS

- 2026 **CVPR'26 Outstanding Reviewer**
Top 5% in 17,491 reviewers
- 2025 **Department Travel Award for Outstanding Conference Publications**
\$2,500 Travel Grant Awarded by Department of Computer & Information Sciences at the University of Delaware
- 2024 **Department Travel Award for Outstanding Conference Publications**
\$2,500 Travel Grant Awarded by Department of Computer & Information Sciences 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**
Department of Computer & Information Sciences at the University of Delaware

PROFESSIONAL SERVICES

Conference Reviewer

- Annual Conference on Neural Information Processing Systems (**NeurIPS**), 2024 – 2026
- International Conference on Machine Learning (**ICML**), 2025 – 2026
- International Conference on Learning Representations (**ICLR**), 2026
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023 – 2026
- International Conference on Computer Vision (**ICCV**), 2023, 2025
- European Conference on Computer Vision (**ECCV**), 2024, 2026
- IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**), 2026
- International Conference on Artificial Intelligence and Statistics (**AISTATS**), 2025 – 2026
- AAAI Conference on Artificial Intelligence (**AAAI**), 2025 – 2026
- British Machine Vision Conference (**BMVC**), 2024 – 2025
- ACM International Conference on Multimedia (**ACM MM**), 2020 – 2024

Journal Reviewer

- Transactions on Machine Learning Research
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- ACM Computing Surveys
- IEEE Transactions on Circuits and Systems for Video Technology
- Neural Networks
- IEEE Transactions on Radiation and Plasma Medical Sciences