Mingyang Wei

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Education

Department of Computer Science, Emory University — Atlanta, USA
M.S. in Computer Science, GPA: 3.91/4.00 — 2023 - 2025

School of Cyber Science and Engineering, Wuhan University — Wuhan, China
B.E. in Information Security, WES GPA: 3.51/4.00, Last 2Y: 3.85/4.00 — 2016 - 2020

Publications

1. **Mingyang Wei**, Dehai Min, Zewen Liu, Yuzhang Xie, Guanchen Wu, Carl Yang, Max S. Y. Lau, Qi He, Lu Cheng, and Wei Jin. **EpiQAL**: Benchmarking Large Language Models in Epidemiological Question Answering for Enhanced Alignment and Reasoning. *Under Review*, 2026.
2. Yunxiao Li, **Mingyang Wei**, Zewen Liu, Max S. Y. Lau, and Wei Jin. Efficient Epidemic Intervention Generation: A Graph Adversarial Attack Perspective. *In WWW WebST*, 2025.
3. Zewen Liu, Yunxiao Li*, **Mingyang Wei***, Guancheng Wan, Max S.Y. Lau, and Wei Jin. **EpiLearn**: A Python Library for Machine Learning in Epidemic Modeling. *In KDD epiDAMIK*, 2024. *Equal Contribution

Awards

- **Bronze Prize**, Kaggle: Harvard Medical School Brain Activity Classification — 2024
- **Emory Computer Science Graduate Scholarship**, Emory University — 2023
- **Dean's List (Academic Year Annual GPA: 3.7+/4.0)**, Wuhan University — 2019
- **Memorial Undergraduate Scholarship**, Wuhan University — 2018

Experience

Emory Melody Lab | Atlanta, USA — 2024.07 - Present
Advisor: Dr. Wei Jin

- Leading the development of **an automated question–answer dataset generation framework** in **epidemiology**, **benchmarking LLMs**. I am designing and implementing modular components to **mitigate model bias** and ensure question **quality** and **difficulty**, integrating **RAG** on knowledge graphs and **logic-chain reasoning**.
- Contributed to the development of **EpiLearn**, a Python package for epidemic modeling with PyTorch, integrating **temporal and spatial models** for analyzing **epidemiological time-series data**. My work focused on implementing **spatial graph-based architectures** such as GAT and GraphSAGE.
- Collaborated on applying **GNN** attack methods to surrogate epidemic models for designing effective intervention strategies. I participated in methodological discussions, implemented **surrogate models**, and conducted experiments under the Mobility Intervention for Epidemic Challenge settings.

Emory Graph Mining Lab | Atlanta, USA — 2025.07 - Present
Advisor: Dr. Carl Yang

- Utilizing a **hypergraph model** to predict patients' amputation status from medical diagnoses, aiming **identify the most influential factor combinations** associated with amputation. I am designing **a customized loss function** that leverages changes in **prediction confidence** when nodes are removed.

Wuhan University | Wuhan, China — 2019.11 - 2020.06

- Analyzed **multimedia data** to explore **covert communication mechanisms** on social media, employing **FFmpeg** for audio-visual extraction and evaluating **steganography robustness** through analysis of **QMDCT** coefficients and signal-level variations.

SoC Workshop at National University of Singapore | Singapore — 2019.07 - 2019.08

- Implemented a defense system against **NFC attacks**, using **IPFS** for verification.

Projects

Harmful Brain Activity Classification
Emory University 2024.03 - 2024.04

- Participated in a team project to classify harmful brain activity from **electroencephalography (EEG)** recordings of critically ill patients.
- Led the **spatial–temporal modeling track**, applying preprocessing techniques such as **banana montage** configuration and **Fast Fourier Transform** (FFT)–based analysis to enhance signal clarity.
- Designed and trained deep neural networks including **WaveNet, ConvFormer**, and **EEGNet** to classify EEG signals, employing advanced training strategies such as **dual-stage training, pseudo-labeling**, and **cosine annealing**.
- Our team's solution achieved a **Bronze Prize** in a Kaggle competition.

Robust Watermark Algorithm Against Screen-Shooting Based on SIFT
Wuhan University 2020.04 - 2020.06

- Conducted an independent graduation project on designing a **watermarking system resilient to screen-shooting distortion.**
- Analyzed **distortion patterns** in screen-photographed images—such as **geometric deformation** and **moiré fringes**—to select appropriate **Scale-Invariant Feature Transform (SIFT)** keypoints and an optimal embedding domain for watermarking.
- Reviewed and refined existing methods to develop **a watermark embedding scheme** using SIFT features in the **Discrete cosine transform (DCT)** domain.
- Implemented an image restoration pipeline based on **Canny edge detection, edge tracing,** and **corner point mapping** to recover photographed images.
- Evaluated the system's robustness under **noise and geometric attacks**, and implemented a functional GUI using **VB .NET**.

Skills

Programming: Python, C, R, MATLAB

Scripting: SQL, VB.NET, HTML, PHP

Tools: PyTorch, vLLM, NumPy, Pandas, FFmpeg, Visual Studio, Wireshark, Nmap, Burpsuite, Metasploit, IDA, OllyDbg, X-ways Forensics

Languages: Chinese (native), English (fluent)

Community Engagement

Volunteer at Jiucaizhuang Village Government | Hohhot, China 2018.08

- Supported local government operations, including data collection and documentation.
- Conducted field research on left-behind children, including interviews and needs assessment.