Yingchen (Eric) Ma

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Education

- Ph.D. in Computer Science, **Georgia Institute of Technology** (Aug 2023 - present)
  Advisor: Srijan Kumar. *Planned minor:* Public Policy. *GPA:* 4.00/4.00.
- M.S. in Computer Science, **Georgia Institute of Technology** (Aug 2021 - May 2023)
  Specialization: Machine Learning. *GPA:* 3.78/4.00.
- B.S. in Computer Science, **University of Michigan** (Sep 2017 - May 2021)
  GPA: 3.54/4.00.

Research Interests

Natural Language Processing	Machine Learning
Large Language Models	Multimodal Learning
Misinformation / Counter-Misinformation	Social Media Analysis
Computational Social Science	Mental Health

Publications

- *Characterizing and Predicting Social Correction on Twitter* [pdf]
  Yingchen (Eric) Ma, Bing He, Nathan Subrahmanian, Srijan Kumar.
  15th ACM Web Science Conference (WebSci'23).
- *Corrective or Backfire: Characterizing and Predicting User Response to Social Correction* [pdf]
  Bing He, **Yingchen (Eric) Ma,** Mustaque Ahamad, Srijan Kumar.
  16th ACM Web Science Conference (WebSci'24).
- *Measuring and Mitigating Group Inequalities In Resource Allocation* [pdf]
  Arya Farahi, Angela Ting, **Yingchen (Eric) Ma**.
  ACM Journal on Responsible Computing.
- *UniGuard: Towards Universal Safety Guardrails for Jailbreak Attacks on Large Language Models* [pdf]
  Sejoon Oh, Yiqiao Jin, Megha Sharma, Donghyun Kim, **Yingchen (Eric) Ma**, Gaurav Verma, Srijan Kumar.
  (Under submission at NAACL '25).
- *Performing Extremism: How Social Media Encourages Extreme Performances for Men's Rights Activists and Fosters a Culture of Hate*
  Ciabhan L. Connelly, Shravika Mittal, **Yingchen (Eric) Ma**, Eric Gilbert, Amy Bruckman.
  (Under submission at CSCW '25).
- *Demographic Disparity in Social Correction of Online Misinformation*
  Yingchen (Eric) Ma, Nathan Subrahmanian, Bing He, Srijan Kumar.
  (Work in progress).

Current Projects

- **Evaluating and Improving Robustness of Multimodal LLMs:** Leading a project to benchmark the robustness of state-of-the-art multimodal large language models to realistic and plausible concept-level perturbations inside the text and image modalities, as well as developing methods to improve this robustness.

    - Advised by Prof. Srijan Kumar, Assistant Professor, CSE @ Georgia Tech

- **Analyzing Demographic Disparities in Social Media Counter-Misinformation:** Leading a project to investigate differences in the creation and receiving of social media posts that counter or debunk online misinformation, measured across user demographic attributes such as race, sex, and education level.
    - Advised by Prof. Srijan Kumar, Assistant Professor, CSE @ Georgia Tech

Previous (completed) Projects

- **Analyzing and Predicting Twitter Counter-Misinformation:** Led a project to investigate features of misinformation-spreading tweets and users that correlate with increased likelihood to receive replies that counter or debunk that misinformation (repository).
    - Advised by Prof. Srijan Kumar, Assistant Professor, CSE @ Georgia Tech

- **Improving LLM Humor Understanding:** Led a project to improve a Llama-2-7b model's ability to generate clear and insightful explanations for puns through finetuning and few-shot prompting (repository).
    - Course final project for CS 8803 LLM (Large Language Models) @ Georgia Tech

- **Analysis of Anxiety Discussion on Twitter:** Investigated the relationship between features of tweets that aim to seek mental health support for anxiety, and the likelihood to receive supportive replies (repository).
    - Course final project for CS 6474 (Social Computing) @ Georgia Tech

- **Urban Road Repair Proposal:** Led a project to develop an end-to-end decision pipeline to propose road repairs in an urban setting, with the objective of maximizing economic, demographic, and accessibility related benefit to the community (repository).
    - Advised by Prof. Arya Farahi, Assistant Professor, SDS @ UT Austin

Work Experience

Graduate Research Assistant, **Georgia Institute of Technology**, Atlanta, GA (Aug 2022 - present)
- See above under "Current / Previous Projects"

Technology Solutions Intern, **Pioneer Natural Resources**, Irving, TX (May - Aug 2023)
- Performed machine learning based risk assessment on physical, chemical, and operational factors that contribute to scaling and subsequent failure of electrical submersible pumps (ESPs) used for oil extraction.

Programming Intern, **Wal Fuel Systems**, Livonia, MI (Dec 2021 - Apr 2022, Jun 2024)
- Implemented planning algorithms to propose more distance, time, and fuel efficient company truck delivery schedules (repository), and an end-to-end pipeline for company planners to use it.

Awards

Marshal D. Williamson Fellowship (Apr 2023)
- Awarded by Georgia Institute of Technology - $1.5K USD

Academic Services

PC Member / Reviewer
- **Conferences:** ICWSM '25
- **Journals:** Harvard Kennedy School (HKS) Misinformation Review

Skills

- **Technical (computational):** Natural language processing, large language models, machine learning, deep learning, multimodal models, applied data analysis, data structures, algorithms.
- **Technical (mathematical):** Optimization, linear algebra, probability, statistics, calculus.
- **Programming languages:** Python (proficient), C++ (proficient), SQL, C, Java.
- **Libraries/frameworks/tools**: ML libraries (Pytorch, Tensorflow, scikit-learn), Transformers, Numpy, Pandas, Matplotlib, Plotly, Streamlit, Jupyter Notebook, Google Colab, Git, Linux, Docker.