

Haoran Zheng

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Summary:

Motivated researcher with a strong foundation in Explainable Artificial Intelligence (XAI) and Machine Learning. Completed M.S. in Applied Data Science at the University of Chicago with a 4.0 GPA. Authored the paper "*SCENE: Evaluating Explainable AI Techniques Using Soft Counterfactuals*," which introduces a novel, human-centered causal inference method to assess XAI techniques in text classification. Holds bachelor's degrees in Economics, Finance, and History from the Ohio State University. Experienced in teaching and research roles across multiple disciplines, including Behavioral Science and Statistics. Recipient of the Pace Setters Award.

Education:

The University of Chicago

Chicago, IL

Master of Science in Applied Data Science (GPA 4.0/4.0)

December 2024

- Thesis: "Demystifying the Black Box: An Empirical Evaluation of Explainable AI Techniques in NLP Tasks"
- Advisor: Dr. Utku Pamuksuz
- Notable Coursework: Bayesian Methods, Generative AI Principles, Advanced Linear Algebra for ML

The Ohio State University

Columbus, OH

Bachelor of Science in Business Administration

May 2022

- Major 1: **Finance** (GPA 3.8/4.0)
- Major 2: **Economics** (GPA 3.9/4.0)
- Major 3: **History** (GPA 3.8/4.0)

Publications:

Under Review:

"SCENE: Evaluating Explainable AI Techniques Using Soft Counterfactuals"

Submitted to: **KDD 2025, EMNLP 2024 Workshop BlackBoxNLP, NeurIPS 2024 Workshop InterpretableAI**

- Received positive feedback with suggestions for improvement from BlackBoxNLP reviewers
- Currently revising for resubmission

Research Experience:

Research Assistant at Mindworks Lab

April 2024 – Present

Roman Family Center for Decision Research, Booth School of Business, The University of Chicago

- Co-manage studies and collect data for renowned scholars like Dr. Nicholas Epley and Dr. Sarah Sebo
- Literature review

Notable Project Managed: "*Engaging with a Robot to Improve Your Overall Wellbeing*"

- Collaborated with the University of Chicago Human-Robot Interaction Lab
- Investigated the impact of personality alignment between humans and robots on the effectiveness of positive psychology exercises

Research Assistant at Epley Lab

September 2024 – Present

Roman Family Center for Decision Research, Booth School of Business, The University of Chicago

- Worked directly with Dr. Nicholas Epley
- Coordinated the Multicultural Study with Yale scholar Yin Li
- Studied cross-cultural perceptions of others' beliefs and preferences

Research Assistant for Dr. Christopher Reed

September 2024 – Present

Department of History, The Ohio State University

- Applied modern NLP techniques and the SCENE method to traditional History research
- Aimed to identify the significance of previously unseen documents

Presentations:

Invited Speaker (Declined due to scheduling conflicts)

Causal Inference Workshop at KDD 2024

Barcelona, Spain

Teaching Experience:

Teaching Assistant for Statistics 2320

February 2021-May 2022

The Ohio State University

- Taught two recitations weekly (65 students each) about statistical topics including but not limited to hypothesis test, regression, time series, Z and T distribution, two-sample comparisons, Chi-square, and ANOVA
- Made customized review notes and visual aids to all 920 students that were enrolled
- Demonstrated how to use analytic tools such as StatCrunch and R weekly
- Held weekly office hours and performed active problem solving

Honors and Awards:

Pace Setters Award

May 2022

Fisher College of Business, The Ohio State University

- Highest distinction for excellence in academics, leadership, and service

Applied Experience:

Financial Analyst

May 2021-May 2023

China Automotive Systems, Inc.

Troy, Michigan

- Designed a neural model that utilized heterogeneous data to forecast and troubleshoot steering gear production
- Analyzed financial and non-financial data to project a future outcomes
- Researched current finance industry trends on Bloomberg terminal and reported them to the CEO at monthly meetings. Made recommendations and positively impacted on company decision making

Skills and Interests:

Technical Skills :

- Explainable AI Techniques: LIME, SHAP, Gradient X Input, Grad L2 Norm, Integrated Gradients, Saliency, Guided Backpropagation, Guided Grad-CAM, DeepLIFT, Deconvolution
- Programming Languages & Tools: Python, R, MySQL, Bash
- Machine Learning Frameworks: TensorFlow, PyTorch
- Natural Language Processing
- Bayesian Methods
- Reinforcement Learning

Research Interests:

- Explainable Artificial Intelligence
- Bayesian Approaches in AI
- Causal Inference in Machine Learning
- Human-Robot Interaction

References:

Dr. Utku Pamuksuz

Associate Clinical Professor, The University of Chicago

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Dr. Batuhan Gundogdu

Research Assistant Professor, The University of Chicago

Email: gundogdu@uchicago.edu

Dr. Greg Green

Associate Senior Instructional Professor of Computer Science

Director, MS in Applied Data Science, The University of Chicago

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