Haoran Zheng

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Summary:

Motivated AI researcher with a focus on Explainable AI. Current Research Assisant at Epley Lab. Completed an 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. Holds bachelor's degrees in Economics, History, and Finance from The Ohio State University. Experienced in teaching roles across multiple disciplines, including 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: *Economics* (GPA 3.9/4.0)
- Major 2: *History* (GPA 3.8/4.0)
- Major 3: *Finance* (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**
- o   Received positive feedback with suggestions for improvement from BlackBoxNLP reviewers
- o   Currently revising for resubmission

Research Experience:

Research Assistant at Epley Lab — September 2024 – Present

Roman Family Center for Decision Research, Booth School of Business, The University of Chicago
- Worked closely with Dr. Nicholas Epley`
- Coordinate *"The Multicultural Study"* with Yale scholar Yin Li
- Study cross-cultural perceptions of others' beliefs and preferences

Research Assistant for Dr. Christopher Reed — September 2024 – Present

Department of History, The Ohio State University
- Apply modern NLP techniques and the SCENE method to traditional History research
- Aim to identify the significance of previously unseen documents

Research Assistant at Mindworks Lab — April 2024 – September 2024

Research Specialist at Mindworks Lab — October 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

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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