

ZIRUO ZHAO

(323) 528-0850 | ziruo.rosie.zhao@gmail.com | Ph.D. Student, Computer Science

EDUCATION

Stevens Institute of Technology

NJ, US

Ph.D. in Computer Science

Sep. 2023 – Present

Coursework: Machine Learning, Deep Probabilistic Generative Modeling, Algorithm Design, Algorithmic Complexity

University of Southern California

CA, US

M.S. in Spatial Economics and Data Analysis

Jan. 2021 – Dec. 2022

Coursework: Spatial Databases, Time Series Analysis, Spatial Econometrics, Spatial Analysis and Modeling

Imperial College London

London, UK

B.Sc. in Mathematics with Statistics

Aug. 2016 – Aug. 2019

Coursework: Scientific Computation, High Performance Computing, Probability and Statistics, Algebra, Analysis

RESEARCH EXPERIENCE

Human–AI Co-authorship Detection

NJ, US

SIT Department of Computer Science

Jun. 2025 – Present

- Developed a fine-grained framework for detecting AI involvement in human writing under realistic and adversarial rewriting settings.
- Built training and evaluation pipelines for robust multi-class detection.
- Manuscript under review at ACL 2026 (ARR).

Theoretical Analysis of Noisy Contrastive Learning

NJ, US

SIT Department of Computer Science

Jun. 2024 – Jan. 2025

- Analyzed the theoretical limits of contrastive learning under adversarial noise.
- Conducted generalization analysis to characterize robustness degradation under noisy contrastive objectives.
- Preprint available on arXiv: [link](#)

Ghost Smelter: Environmental Justice Analysis of Historical Lead Smelters

CA, US

USC Spatial Sciences Institute

Jun. 2022 – Oct. 2022

- Analyzed environmental justice impacts of historical lead smelters in California using large-scale spatial and socioeconomic data.
- Built data processing pipelines based on U.S. Census TIGER and American Community Survey data and carried out statistical analyses to assess socioeconomic impacts.
- Results presented at the Association of Pacific Coast Geographers (APCG) conference.

WORK EXPERIENCE

NetEase Network Co., Ltd.

Hangzhou, China

Data Analyst Intern, Media Technology department.

Jul. 2021 – Oct. 2021

- Designed and implemented data-driven evaluation pipelines for social media product quality and UX metrics.
- Analyzed A/B testing results to assess feature and model impact on user experience.
- Collaborated with cross-functional teams to translate analytical insights into product optimization.

PROJECTS

- **Explainable LLM:** Analyzed shortcut learning and lexical overlap bias in transformer-based language models on NLU tasks; applied Integrated Gradients and long-tailed analysis to interpret bias reliance and generalization behavior.
- **Spatial Data Analysis:** Conducted statistical and spatial regression analyses on housing sales data; built and presented an interactive analysis report using ArcGIS StoryMaps: [link](#)

SKILLS

Programming Skills: Python, R, SQL, MATLAB, Fortran

Language Skills: Mandarin, English