

Sai Hao

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Research Interests: Statistical Machine Learning, Large Language Models, Uncertainty Quantification

EDUCATION

Southern University of Science and Technology Ph.D. Candidate, Department of Statistics and Data Science; Advisor: Prof. Bing-Yi Jing	Sep 2023 - Present
Lanzhou University M.S., School of Mathematics and Statistics; Advisor: Prof. Zhouping Li	Sep 2019 - Jun 2022
Lanzhou University B.S., School of Mathematics and Statistics; GPA: 4.27/5.00	Sep 2015 - Jun 2019
Minor in Applied Psychology	Sep 2016 - Jun 2018

RESEARCH EXPERIENCE

Southern University of Science and Technology Department of Statistics and Data Science Prof. Bing-Yi Jing's Research Group	Jul 2022 - Sep 2023 Research Assistant
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PROJECT EXPERIENCE

Construction Industry QA System • Built a domain QA pipeline with Yi-1.5-Chat-34B, LoRA, and RAG to improve standards retrieval across fragmented construction codes, atlases, and design documents. • Digitized, parsed, and indexed 1,000+ technical books; generated training data using Mathpix/TextIn, Markdown chunking, and GPT-4. • Fine-tuned models with LoRA in LLaMA-Factory, improving the parsing of Markdown tables and structured numerical data and enabling prompt-controlled response styles.	SUST & Beijing Deepexi 2023
Fiber Asymmetry Detection in Time-Synchronization Networks • Formulated fiber-asymmetry detection as sparse linear regression on tree-structured synchronization networks; developed a SCAD-penalized estimator for real city-scale topologies. • Added adaptive tuning, confidence-based node grouping, passive-loop modeling, and observation-node placement to improve robustness and practical deployment in complex networks.	SUST & Huawei 2022-2025
Intelligent Streaming Data Acquisition • Designed stratified sampling for large-scale network streams by user ID, application type, and time window, reducing compute and storage costs for service-quality metrics. • Achieved stable estimates over 100 repeated experiments with average error below 5%, validating streaming metric estimation at low sampling rates.	SUST & Huawei 2022-2023

PUBLICATIONS

• Sai Hao , Hao Zeng, Hongxin Wei [*] , Bing-Yi Jing [*] . RACER: Risk-Aware Calibrated Efficient Routing for Large Language Models. <i>ICML</i> , 2026.
• Sai Hao , Zhouping Li [*] , and Bing-Yi Jing. A Multi-label Classification Approach for Functional Data Based on Conformal Prediction Bands. <i>Canadian Journal of Statistics (CJS)</i> , 2025.
• Zejian Xie [†] , Songxin Zhang [†] , Sai Hao [†] , Zhanghao Chen [†] , Ya Wang [†] , and Bing-Yi Jing [*] . On Large-Scale System of Sparse Linear Equations with Tree Structures and its Applications to Fiber Optic Networks. <i>Journal of the American Statistical Association (JASA)</i> , 2025, accepted.
• Sai Hao , Bing-Yi Jing [*] , Jianxin Pan, Ya Wang, Xinlei Wu [*] . REXO-LLM: Robust Exogenous-Aware Large Language Models for Time Series Forecasting. 2025, Under Review.
[†] Co-first authors; [*] Co-corresponding authors.

HONORS & AWARDS

Outstanding Graduate Teaching Assistant, Southern University of Science and Technology	2023
Outstanding Graduate Student, Lanzhou University	2020
First-Class Academic Scholarship, Lanzhou University	2020
Third Prize (Team), AI Application Challenge	2020
Second Prize, 17th China Graduate Mathematical Contest in Modeling (Huawei Cup)	2020