Rui Sang

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Education

Xi'an Jiaotong-Liverpool University — Suzhou, China
BSc (Hons) in Information and Computing Science — Sep 2022 – Jun 2026 *(expected)*

- **Major GPA:** 4.00 / 4.00 | **Overall GPA:** 3.96 / 4.00 | Top 5%
- **Honors:** University Academic Achievement Award Scholarship — 2023, 2024, 2025
- **Research Interest:** Machine Learning, Signal Processing

Publications

1. Y. Liu, **R. Sang**, P. Zhang, Z. Li, S. Li, Training a Perceptual Model for Evaluating Auditory Similarity in Music Adversarial Attack, *17th International Symposium on Computer Music Multidisciplinary Research* (**CMMR**), 2025. *[Accepted]*
2. Y. Liu*, P. Zhang*, **R. Sang**, Z. Li, S. Li, MAIA: An Inpainting-Based Approach for Music Adversarial Attacks, *International Society for Music Information Retrieval* (**ISMIR**), 2025. *[Accepted]*
3. P. Zhang*, Y. Liu*, Z. Li, **R. Sang**, Y. Cai, Y. Tan, S. Li, An Entropy-Guided Curriculum Learning Strategy for Data-Efficient Acoustic Scene Classification under Domain Shift, *Workshop on Detection and Classification of Acoustic Scenes and Events* (**DCASE Workshop**), 2025. *[Accepted]*

Research Experience

Infrared–Visible Multimodal Image Fusion — Jun 2025 – Present
Research Assistant, Advised by Dr. Xiaohui Zhu

- Co-developed the SWF-DETR framework, architecting its cross-modal attention module to establish synergy between Transformer-based fusion and detection.
- Led experimental validation achieving SOTA performance: improved mAP50 by **1.4%** and model stability by **9.7%** through rigorous benchmarking and ablation studies.

Entropy-Guided Curriculum under Device-Induced Shift — Jan 2025 – Jun 2025
Research Intern, Advised by Dr. Shencheng Li

- Trained an auxiliary domain classifier and applied Shannon entropy-based ranking to schedule data from invariant to device-specific.
- Achieved a **+2.6%** absolute accuracy improvement on unseen devices under a **5%** low-data regime. [Pub. 3]

Reliability & Human-Aligned ML under Distribution Shift — Sep 2024 – Jun 2025
Research Intern, Advised by Dr. Shencheng Li

- **Revealed perceptual misalignment in audio models** by engineering a dataset of **18,000+** perturbed samples, enabling a novel contrastive learning framework that improved robust accuracy by **+9.15%**. [Pub. 1]
- **Building on this work** ,I then developed the critical importance analysis module for the MAIA white-box attack, adapting Grad-CAM to the audio domain to enable targeted, perceptually-stealthy attacks. [Pub. 2]

Projects

Online Meeting Room Booking System *Team Lead* — Mar 2025 – Apr 2025

- Led the full-stack architecture for a web application as team lead, defining the database schema, front-end UI, and a modular MVC backend with Spring Boot, JWT Security, and MySQL.
- Engineered a multi-level Redis caching strategy to optimize performance for session management and hot data; containerized the application with Docker for consistent, high-availability deployment on Alibaba Cloud.

GenAI-powered Student Travel Planner App *Team Lead* — Mar 2025 – Apr 2025

- Directed the end-to-end user-centered design process for a GenAI-powered travel planner, translating user research (interviews, personas) into a high-fidelity, interactive prototype in Figma.
- Validated the prototype's usability through three iterative testing cycles, achieving an excellent System Usability Scale (SUS) score of 84.65 and incorporating user feedback to refine key features.

Skills

Programming: Python, Java, C/C++, LaTeX.

Technologies: PyTorch, Spring Boot, MySQL, CUDA, Redis, Git, Docker, Figma.

Activities

Class Committee Member: *Class 4 of 2026, Xi'an Jiaotong-Liverpool University* — 2023 – 2024
Coordinated student-faculty communication, class activities, and student development initiatives.

Event Planner – Drama Club: *Xi'an Jiaotong-Liverpool University* — 2022 – 2023
Assisted in organizing campus theater productions, script promotion as part of the Planning Department.

Volunteer – Autism Support Program: *"Star Children" Project, Suzhou* — 2023
Provided one-on-one support and facilitated inclusive community programs for children with autism.