Ze RONG

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Research Focus: Spatial Intelligence and Visual Generalization

EDUCATION

University of Macau **09/2026 – Present**

- M.Sc. in Artificial Intelligence | Advisor: Prof. Zhedong Zheng

Nantong University **09/2022 – 07/2026**

- B.Eng. in Computer Science | Undergraduate advisor: Prof. Lei Ma

PUBLICATIONS

*† Equal Contribution. * Corresponding author.*

Published / Accepted

- Lei Ma†, **Ze Rong†**, Xiaofeng Shen, Xinliang Cao, Leixiao Yu, Ting Li*. *FuzzyStateFormer: A Neuro-Fuzzy State-Aware Framework With Transformer Temporal Encoding for Reliability-Aware Non-Invasive Long-Sequence fMRI Semantic Decoding*. IEEE Transactions on Fuzzy Systems (TFS), 2026.
- Xiaofeng Shen†, **Ze Rong†**, Haoyang Qin, Binhao Zhao, Yue Xu, Lei Ma*. *SCORE: Soccer Curriculum for Ordinal Affect Recognition with Evidence*. ACM International Conference on Multimedia Retrieval (ICMR), 2026.
- **Ze Rong**, Xiaofeng Shen, Haoyang Qin, Yue Xu, Hongjun Li, Lei Ma*. *FIRM: Fusion-Injected Residual Memory Brings Token-Level Alignment to Unsupervised VI-ReID*. Asian Conference on Machine Learning (ACML), 2025.
- **Ze Rong**, Ziyue Zhao, Zhaoxin Wang, Lei Ma*. *FaRMamba: Frequency-based Learning and Reconstruction Aided Mamba for Medical Segmentation*. International Conference on Neural Information Processing (ICONIP), 2025.
- Zhaoxin Wang, Wenwen Yang, **Ze Rong**, Zhengyu Li, Xing Wang, Lei Ma*. *Multi-Scale Crossed Algorithm for Ultrasound Medical Image Segmentation Based on MSC-LSAM*. Journal of Data Acquisition and Processing, 2025.
- Zhaoxin Wang, Wenwen Yang, Zhengyu Li, **Ze Rong**, Xing Wang, Jincong Han, Lei Ma*. *A 25-Year Retrospective of the Use of AI for Diagnosing Acute Stroke: A Systematic Review*. Journal of Medical Internet Research (JMIR), 2024.

Preprint / Technical Report

- **Ze Rong**. *PACE: Polar Axis-Conditioned Estimation for PairUAV Relative Localization*. arXiv:2607.17268, 2026; code: github.com/zerong7777-boop/PairUAV-PACE.

RESEARCH EXPERIENCE

Project: UAV Localization and Cross-Domain Visual Generalization | 2026–Present

Researcher

- Developed PACE for the ACM MM 2026 PairUAV task: factor-aware polar relative localization with separate heading/range evidence; released the method, code and reproducibility materials.
- Investigating Sim2Real UAV cross-view geo-localization (UNI-1652 to SUES), including effects of source trajectory segments, viewpoint changes and source-target coverage.

Project: Cross-Modal Representation Learning | 2025–2026

Project Leader

- Developed FIRM (ACML 2025) for unsupervised visible-infrared person re-identification, improving cross-modal token alignment under noisy pseudo-label supervision.
- Conducted model design, ablations and evaluation for visual and language-guided representations across modalities.

Project: Multimodal Video Understanding and Reasoning | 2024–2026

Project Leader

- Led task and data development for soccer-video reasoning, including temporal affect recognition and evidence-grounded multimodal understanding.
- Co-first-authored SCORE (ICMR 2026), studying ordinal affect recognition when broadcast views contain ambiguous or weak visual evidence.

Project: Medical Imaging and Neural Semantic Decoding | 2024–2026

Project Leader

- Led mouse cochlea imaging dataset curation with Nantong University collaborators; studied reconstruction and fine-structure segmentation, including FaRMamba (ICONIP 2025).
- Co-first-authored FuzzyStateFormer (IEEE TFS 2026), incorporating state-aware neuro-fuzzy temporal modeling for long-sequence non-invasive fMRI semantic decoding.

OPEN-SOURCE & ENGINEERING HIGHLIGHTS

- Released research code and evaluation materials for PACE; worked on reproducible training, validation, and comparative experiments in UAV localization.
- Research implementation: Python, PyTorch, vision Transformers, multimodal representation learning, data processing, model ablations and benchmarking.

HONORS & AWARDS

- ACM MM 2026 UAVM PairUAV Challenge — 3rd place on the official leaderboard (2026).
- Raytron / DataFountain Infrared Super-Resolution Challenge (2026) — Stage 2, 5th place; Top-10 offline finalist (139 teams).

ACADEMIC SERVICE

- Conference reviewer: IEEE ICME (2025, 2026), ACM ICMR (2026), IEEE ICASSP (2026), ACM Multimedia Asia (2026).
- Journal reviewer: Applied Intelligence.