

Zeyuan Xu

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Education

Fuzhou University 2022 – 2026

School of Advanced Manufacturing, B.S. in Logistics Management

GPA: 88.22/100 Rank: 12/227

Selected Courses: Python(96), Data Analysis and Mining(93), Linear Algebra(94), Advanced Mathematics(98)

Research Interests: Multimodal LLMs, Time-Series Forecasting, Deep Learning, Heuristic Optimization

Hunan University 2026 – 2029

School of Computer Science and Electronic Engineering, M.S. in Computer Science and Technology

(Admitted, Rank3, 90.4 in exemption interview)

Publications & Manuscripts

1. **Zeyuan Xu, et al. Towards Disentangling Driving-Overlap in Air Quality Diagnosis: Representation Realigned Multiscale Temporal Disentanglement for Latent Pattern Discovery.**
IJCAI 2026 (CCF-A), Under Review, Jan 2026. [First Author]
2. **Zeyuan Xu, Shirong Guo, Gang Mou. Real-Time Boiler Fault Detection Using the Multimodal GCA Model Optimized by GVSAO.**
IEEE Sensors Journal (JCR Q1, IF: 4.5), Accepted, Oct 2025. [First Author]

Research Experience

1. **Code-Aware OCR for Structured Document Understanding**
Role: Collaborative Project (with Zhanli Li, zuel) **Status:** In progress (Target: EMNLP) Jan 2026 – Present
 - Ongoing collaboration; currently in literature review and system design for code-block structure recognition in OCR.
2. **CTMDRSP: Cross-Truck Collaborative Delivery Optimization with Multi-Truck Multi-Drone Systems**
Role: Project Leader. **Status:** In progress (Target: TITS / ESWA) Jan 2026 – Present
 - Proposed a two-stage framework for collaborative truck-drone delivery with shared drones across truck teams.
 - Formulated routing and time-window constraints with drone workload balancing and overtime penalty; objective is to minimize the maximum route completion cost.
 - Completed model design, constraint formulation, and solver framework; currently conducting operator enhancement, ablation studies, and evaluation.
3. **Towards Disentangling Driving-Overlap in Air Quality Diagnosis: Representation Realigned Multiscale Temporal Disentanglement for Latent Pattern Discovery**
Role: Project Leader. **Status:** Under Review (IJCAI 2026) May 2025 – Dec 2025
 - Developed a multiscale disentanglement framework with representation realignment to address driving-overlap in nonlinear temporal systems.
 - Combined SHAP attribution and Continuous Wavelet Transform to extract aligned driving-force patterns from black-box model responses.
 - Validated on a 10-year dataset from 36 Chinese cities and revealed spatial-temporal heterogeneity in air-quality evolution.
4. **Real-Time Boiler Fault Detection Using the Multimodal GCA Model Optimized by GVSAO**
Role: Project Leader. (Advisor: Gang Mou, fzu) **Status:** Accepted May 2025 – Oct 2025
 - Built a dual-branch GCA model with GAF-based feature mapping for sparse industrial sensor signals; achieved 93.1% on real-time boiler fault detection.
 - Designed GVSAO with good-point-set initialization and periodic mutation to mitigate local optima in hyperparameter optimization.

Selected Honors and Projects

- **BYD Scholarship** (Top 0.1% university-wide), Nov 2025.
- **China Undergraduate Mathematical Contest in Modelling** (First Prize, Leader, Top 5%), Dec 2025.
- **China Undergraduate Mathematical Contest in Modelling** (First Prize, Leader, Top 5%), Dec 2024.
- **16th The Electrician Mathematical Contest in Modeling** (First Prize, Leader, Top 5%), May 2024.
- **Auto-Tutor: Intelligent Email Generation System for Research Applications**, Open-source project contributor, 80+ GitHub stars.

Other Skills

Languages: Chinese (Native), English (CET-6)

Programming & Tools: Python, C/C++, L^AT_EX, Markdown, Docker, Git

Deep Learning: PyTorch, Transformers, ms-swift

Research Tools: Origin, Visio, SPSS, Photoshop

Mentoring: Zehao Li (2025), Zining Xu (2025)