# Yiqiang Ye

✉ yaniszz085@gmail.com

## Research Interests

My research develops intelligent agent systems for complex physical and spatial environments through an **AI-driven interdisciplinary approach**, aiming to bridge physics-based modeling, data-driven learning, and agent-based reasoning to address real-world challenges in dynamic systems.

- **Physics-Informed Environment Modeling:** Developing physics-informed, multi-scale representations for complex spatial systems, including spherical modeling for meteorological downscaling under strong physical priors.
- **Knowledge-Integrated Spatial Decision-Making:** Designing learning-based decision frameworks that integrate domain knowledge and structured constraints, with applications to spatial planning and strategy optimization in real-world systems.

My long-term vision is to advance **generalizable, knowledge-aware agent systems** at the intersection of AI and multi-disciplinary scienceintegrating interpretable world models with foundation model capabilities including episodic memory, causal reasoning, and emergent multi-agent coordination. This synthesis aims to enable trustworthy, long-horizon decision-making in safety-critical domains such as climate adaptation and environmental management.

## Education

**Shenzhen University** — **Shenzhen, China**
*M.S. in **Computer Technology*** — *2023 – 2026*

- **Ranking: 21/132** (Top 16%)

**Guangdong University of Technology** — **Guangzhou, China**
*B.S. in **Information and Computational Science*** — *2019 – 2023*

- **Recommended for Admission**

## Publications

1. **Spherical Physics-informed Neural Operator with Multi-scale Coupling for Meteorological Downscaling**
   - **Yiqiang Ye***, Yichi Wang*, Jiawei Wen, Jiahui Jiang, Zhaoyu Zhong, Jiangjian Yu, Chunxia Xiao, Haodi Zhang
   - Under Review at the 35th International Joint Conference on Artificial Intelligence (**IJCAI**), **CCF-A**, *Co-first authors
2. **Keeping Chinas agriculture within environmental boundaries through precision mitigation with minimal technology and cost**
   - Lu Zhang*, Yanye Zhang*, **Yiqiang Ye***, Xiangwen Fan, Haotian Liu, Junjie Liu, Qishun Zhou, Xuan Wang, Haodi Zhang, Zhaohai Bai, Lin Ma
   - Under Review at **Nature Communications**, *Co-first authors
3. **Deep reinforcement learning unlocks sustainable livestock reallocation to cut nitrogen pollution by 70%**
   - Xiangwen Fan*, Haodi Zhang*, Jianghao Wang*, Zhaohai Bai*, **Yiqiang Ye**, Kaixin Zhu, Wilfried Winiwarter, Xin Zhang, Jiafa Luo, Maryna Strokal, Gang Wang, Bojin Liu, Chenyu Liu, Yanye Zhang, Yanyu Wang, Lu Zhang, Lin Ma
   - Under Review at **Nature Sustainability**, **First Student Author**
4. **LF-DET: A Synthetic-to-Real Transfer Learning Framework for Lens Flare Detection**
   - Chen-Bin Feng, **Yiqiang Ye**, Yiguo Jiang, Hau-Sing So, Mengzhu Wang, Chi Man Vong
   - Under Review at the 35th International Joint Conference on Artificial Intelligence (**IJCAI**), **CCF-A**
5. **UNO: Universal Neural Operator for Complex Climate Systems with Spatiotemporal Self-Supervised Learning**
   - Jiahui Jiang*, Yichi Wang*, Jiawei Wen, **Yiqiang Ye**, Zhaohai Bai, Lin Ma, Xuan Wang, Haodi Zhang
   - Under Review at the 35th International Joint Conference on Artificial Intelligence (**IJCAI**), **CCF-A**
6. **Interpretable Pulmonary Disease Diagnosis with Graph Neural Network and Counterfactual Explanations**
   - Jiahong Li, Yiyuan Chen, Yichi Wang, **Yiqiang Ye**, Min Sun, Hao Ren, Weibin Cheng, Haodi Zhang
   - **Published**: 2023 2nd International Conference on Sensing, Measurement, Communication and Internet of Things Technologies (**SMC-IoT**), **EI**
7. **Restructuring China-Brazil agricultural trade to resolve nitrogen pollution and water safety**
   - Gang Wang, Xiangwen Fan, Xun Wei, Jialu Xu, Xi Chen, Ling Liu, **Yiqiang Ye**, Lin Ma, Zhaohai Bai
   - Under Review at **Agricultural Systems** (CAS Tier 1)

## Selected Honors and Awards

**2023**: Grand Prize Student Scholarship, Shenzhen University

**2024–2025**: Outstanding Student Scholarship, the Second Prize, Shenzhen University

**2019–2023**: Outstanding Student Scholarship, the Third Prize, Guangdong University of Technology

## Core Skills

- **LLM Training & Alignment:** Full-parameter SFT, PEFT (**LoRA, QLoRA**), and RL post-training (**DPO, GRPO, PPO**). Specialized in reasoning enhancement and reward modeling.
- **System & Infrastructure:** Distributed training via **DeepSpeed** and **FSDP** (DP/TP/PP). High-performance inference with **vLLM**. Model quantization (AWQ, GPTQ) and **verl** for RL training.
- **Multimodality:** Experienced in **Multimodal LLM (MLLM)** development and tool-calling agentic workflows.