Zhang Yiyuan

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OBJECTIVE

To obtain a **Ph.D. in ME or ECE**, with the aim of advancing my knowledge and skills in the field of ***Intelligent System Optimization and artificial intelligence***, contributing to scientific research, and pursuing a career as a researcher in academia or industry.

EDUCATION

Zhejiang University *Zhoushan, China*

MPhil. In Machinery, Ocean College (GPA: 3.44/5.00) *Sep. 2021 - Mar. 2024 (Expected)*

- Artificial Upwelling (AU) Technology Group, Advisor: Prof. Wei Fan
- Research Interests: AU Technology & Intelligent Algorithms

Dalian Maritime University *Dalian, China*

B.Eng. in Marine engineering college (GPA: 4.00/5.00, **rank Top 2%**) *Sep. 2017 - Jun. 2021*

- Outstanding graduates and Merit student
- HUAYANG Maritime Scholarship (< 2%)

RESEARCH PROJECTS

Layout Optimization for Underwater Nozzle Array of Air-lifted Artificial Upwelling System Based on Discrete Particle Swarm Algorithm

- **Modeling** artificial upwelling efficiency under crossflow.
- Optimized nozzle layout using **DPSO algorithm**.
- Providing practical insights for AU system optimization design.
- Co-authored peer-reviewed papers on this topic.
- **Submitted manuscripts** to the reputable ocean journal "**Applied Ocean Research**." (Under review)
- Demonstrated strong problem-solving and critical thinking skills

Deep Reinforcement Learning for Artificial Upwelling Energy Management

- Developed a **DRL-based algorithm** to optimize energy management strategy under **uncertain environmental conditions** while ensuring system safety and maximizing efficiency.
- Combined **deep quantile networks** with **deep dueling network** architectures to improve convergence speed and robustness of the DRL method.
- Conducted extensive simulation experiments to demonstrate the effectiveness of the proposed solution and provided insightful analytical results for system operation.
- Demonstrated proficiency in programming languages commonly used in DRL, such as **Python and Pytorch**.
- **Collaborated with a team** of researchers **and worked independently** to design experiments, analyze data, and develop solutions.

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PERSONAL SKILLS

- Language ability: CET-6: 497, IELTS: Be preparing.
- Programming ability: Familiar with deep learning libraries such as TensorFlow and PyTorch.