Yuxing Wang (王昱兴)

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RESEARCH INTERESTS

Main topics: Robot Co-design, Robot Learning, Reinforcement Learning, Evolutionary Computation, Embodied AI.

I am particularly fascinated with building intelligent robotic systems that dynamically adapt their morphologies and behaviors. The related topics I have touched upon to evolutionary reinforcement learning for robot control optimization and brain-body co-design for modular robots. I worked on the application of Game AI, rigid robots, and a bit of soft robots.

EDUCATION&WORK

TSINGHUA UNIVERSITY

2023.07-Now

- Research Assistant @ Tsinghua SIGS
- Research Associate @ Research Institute of Tsinghua University in Shenzhen

TSINGHUA UNIVERSITY

2020.08-2023.06

- M.Eng. in Electronic and Information Engineering
- Advised by Prof. Xuegian Wang
- Cumulative GPA: 3.89/4.00, Rank: 2/45

SOUTHWEST MINZU UNIVERSITY

2016.09-2020.06

• B.Eng. in Communication Engineering with Highest Honors

• Cumulative GPA: 3.86/4.00, Rank: 1/145

PUBLICATION

- Y Wang, S Wu, T Zhang, Y Chang, H Fu, Q Fu, X Wang, PreCo: Enhancing Generalization in Co-Design of Modular Soft Robots via Brain-Body Pre-Training, *Oral Presentation*, *Top 6.6%*, *Conference on Robot Learning 2023*, 2023.11
- Y Wang, S Wu, H Fu, Q Fu, T Zhang, Y Chang, X Wang, Curriculum-based Co-design of Morphology and Control of Voxel-based Soft Robots, *International Conference on Learning Representations* 2023, *H5-index=303*, 2023.01
- T Zhang, Z Lin, Y Wang, D Ye, Q Fu, X Wang, B Liang, X Li, Dynamics-Adaptive Continual Reinforcement Learning via Progressive Contextualization, *IEEE Transactions on Neural Networks and Learning Systems*, *JCR Q1*, *IF=14.255*, 2022.08
- Y Wang, T Zhang, Y Chang, B Liang, X Wang, B Yuan, A Surrogate-Assisted Controller for Expensive Evolutionary Reinforcement Learning, *Information Sciences*, *JCR Q1*, *IF=8.233*, 2021.12
- Y Wang, B Yuan, From Big Data Based Price Discrimination to Privacy Leakage: Ethical Analysis and Reflections on Privacy Issues from the Perspective of Hardware and Software, *Science Economy Society (Chinese)*, 2021.10
- Y Wang, Y Jiang, A Weighted Minimum Distance Classifier Based on Relative Offset, *IEEE 4th International Conference on Cloud Computing and Big Data Analysis*, 2019.04

RESEARCH EXPERIENCE

2022.05-2023.04 Research Intern: Quality-Similarity Diversity Optimization for Generating User-Preferred Game AI

Tencent AI Platform Department

Funded by Tencent Rhino-Bird Research Elite Program

Advised by Shuang Wu and Haobo Fu

• Built a universal tool for quality-similarity diversity optimization, capable of generating task-specific diversity for Game AI using a set of user-specified behavior descriptors; Applied this tool to a variety of games such as Atari 2600 and "Auto Chess".

2020.01-2021.12 Project: Human versus Machine Intelligence

Tsinghua University

Funded by Natural Science Foundation of China

• Constructed distributed Deep Q Networks (DQNs) and Evolutionary Strategies (ES) for training RL agents; Established the overall training framework; Expert-level players were defeated by our proposed agent model.

2018.08-2019.12 Project: A Wearable Hand Rehabilitation Robot

Southwest Minzu University Funded by National Undergraduate Training Program of Innovation & Entrepreneurship

• Built a wearable hand rehabilitation robot to assist patients in performing rehabilitation exercises, such as finger flexion and extension; Fabricated the robot via 3D printing; Debugged the circuit; Established a web server for collecting data.

2017.06-2018.06 Competition: International Underwater Robot Competition, 2D Simulation League

Southwest Minzu University-Peking University Joint Underwater Robot Lab

• Developed control strategies for 2D simulated fishes using C#; Lead the group to win First Prize in IURC 2017, 2018.

ACADEMIC SERVICE

Reviewer (JOURNAL): TNNLS, INFORMATION SCIENCES, IEEE ACCESS

Reviewer (CONFERENCE): NIPS 2023, ICLR 2024, ICML 2024

AWARDS AND SCHOLARSHIPS

National Scholarship	2017-2019
• First Prize, International Underwater Robot Competition	Jul. 2017
Honorable Mention, Mathematical Contest in Modeling	Apr. 2018
• First Prize in Central and Southwestern China Division, "TI Cup" National Undergraduate IOT Design Contest	st Aug. 2018
• Bronze Award, National College Student Curricular Academic Science and Technology Works Competition	Mar. 2019
Outstanding Graduate of Sichuan Province	Apr. 2020
• 《PEOPLE's DAILY》 Representative List of National Scholarship Winners for Undergraduate Students	Apr. 2020
Tencent Rhino-Bird Research Elite Program	May. 2022

ACTIVITIES / SKILLS

- Activities: Teaching assistant of "Data Mining" and "Ethics of Artificial Intelligence" (THU), Fall 2021.
- Skills: Python, Torch, TensorFlow, Latex, Linux, C++ and MS Office Suite; Teacher Qualification Certificate.
- Interests: Table tennis, voluntary work and bamboo flute.