

# Yao Tang

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## RESEARCH INTERESTS

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I am broadly interested in **Machine Learning** with a focus on **Sequential Decision Making** and **Deep Reinforcement Learning**. I am currently working on modelling decision-making with generative models. I have also explored self-supervised pretraining for reinforcement learning to enable the model to perform better on downstream tasks.

## EDUCATION

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**SEIEE, Shanghai Jiao Tong University**

Shanghai, China

Major in Computer Science and Technology, GPA: 3.8 (top 20% )

Sept. 2020 - Present

**Relevant Coursework:**

- Linear Algebra 100/100
- Probability and Statistics 97/100
- Advanced Mathematics II 93/100
- Reinforcement Learning/Game Theory 93/100

## PUBLICATIONS

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**FutureDD: Planning in POMDP with Encoded Future Dynamics**

*Yao Tang, Zhihui Xie, Tong Yu, Bokai Hu, Shuai Li*

In preparation.

**Curriculum Masking for Multi-Skill Pretraining**

*Yao Tang\*, Zhihui Xie\*, Zichuan Lin, Deheng Ye, Shuai Li*

In submission to ICML 2024.

**Risk-Aware Constrained Reinforcement Learning with Non-Stationary Policies**

*Zhaoxing Yang, Haiming Jin, Yao Tang, Guiyun Fan*

AAMAS 2024.

## EXPERIENCES

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**Undergraduate Research Intern - John Hopcroft Center, SJTU**

Shanghai, China

**Decision Making under Uncertainty**

Jul. 2023 - Present

- Exploring conditional generative modeling for decision making in POMDP and developing a novel framework for planning in POMDP with a future prior
- Conducting experiments to validate the effectiveness of our framework and comprehensive analysis of the results

**Self-Supervised Pretraining for RL**

2023

- Exploring the impact of different masking strategies during pretraining on the performance of pretrained models in downstream tasks and conducting extensive experiments to verifying it
- Collaboratively designing a curriculum-based masking strategy with a multi-armed bandit algorithm to pretrain models with versatile skills

**Constrained Reinforcement Learning**

2022

- Conducting experiments on traditional constrained reinforcement learning algorithms

## SELECTED AWARDS

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Jing'e Overseas Study Funding (9 persons out of university)

2023

Shanghai Jiao Tong University Academic Progress Scholarship (5%)

2022

Competition of Odyssey of the Mind, China, Second Prize (10%)

2021

National Oil Corporation Scholarship (10%)

2021

## SKILLS

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- **Skills:** Python (Pytorch), C++, Linux, L<sup>A</sup>T<sub>E</sub>X
- **Languages:** English (TOEFL 103/120), Chinese (Native)