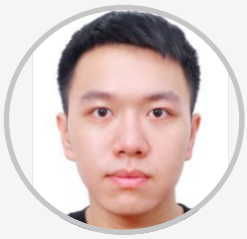

Yi Shen

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ABOUT ME

A self-driven, enthusiastic, curious and research-oriented graduate student with a passion for researching deep reinforcement learning, with in depth knowledge of programming and mathematics.

EDUCATION AND TRAINING

01/09/2022 – 01/07/2025 GuangZhou, China

MASTER Sun Yat-sen University

Operational Control Theory, Principles and Applications of Reinforcement Learning, Functional Analysis, Statistical Pattern Recognition, Operations Research, System Experiment Design and Uncertainty Theory

Website https://www.sysu.edu.cn/sysuen/ | **Field of study** Mathematics | **Level in EQF** EQF level 7

01/09/2018 – 01/07/2022 Nanjing, China

BACHELOR Nanjing Agricultural University

Probability Theory, Mathematical Statistics, Numerical Analysis, Function of Real Variable and Function Analysis, Complex Function, Stochastic Process

Website www.njau.edu.cn/ | **Field of study** Natural sciences, mathematics and statistics | **Level in EQF** EQF level 6

PROJECTS

01/05/2024 – CURRENT

Under review: Hypercube Policy Regularization Framework for Offline Reinforcement Learning

Policy Regularization methods in offline reinforcement learning have achieved good results in some datasets, but a good result is not obtained when the policies in datasets are of poor quality. To deal this problem, we propose a method that allows agents to explore actions corresponding to some states in datasets, we also combine this method with algorithms such as TD3-BC for experiments. Algorithms has achieved SOTA in Gym, Antmaze, and Adroit.

01/05/2023 – CURRENT

Under review: Grid-Mapping Pseudo-Count Constraint for Offline Reinforcement Learning

In this paper, I proposed GPC, a novel method that utilizes pseudo-counting to quantify uncertainty in offline RL and use it to constrain the Q-value of OOD state-actions, resulting in an algorithm GPC-SAC. In theory, we proved that accurate uncertainty constraints can obtained by GPC under fewer conditions than other pseudo-count methods. The experimental results of GPC-SAC show that the performance of GPC-SAC is the best in most environments.

01/03/2023 – 01/10/2023

A test data analysis and evaluation system

This project aim to analysis and evaluate a specific set of data. In this project I evaluated the data by neural networks like GAN, CNN and RNN. I also wrote the data evaluation part of the paper.

01/03/2023 – 01/09/2023

National Natural Science Foundation of China project: Sequential design of multi-model multi-fidelity weaponry tests in a Bayesian optimisation framework

This project focuses on the use of a multi-model, multi-fidelity Bayesian optimisation framework for sequential design of data, in which I propsed adaptive sampling method that corrects the sampling frequency of high fidelity sample points based on the error between high fidelity and low fidelity points after sampling. I also proposed combining ensemble methods at low fidelity model.

01/11/2022 – 01/01/2023

Vehicle registration number recognition

The objective of this project is to identify the licence plate number without using neural network. In this project I collaborated with my classmates to use Support Vector Machines for recognition of licence plates

01/09/2021 – 01/06/2022

Undergraduate thesis: Kinetic analysis of a model of a certain type of infectious disease

In this project, I considers the possibility of disease variation on the basis of the SEIR infectious disease model, and studies the dynamic properties of infectious disease models through Jacobian matrix, Lyapunov functional method, and Kirchhoff matrix tree theoremtion.

01/12/2019 – 01/06/2020

Optimization and stability analysis of infectious disease transmission model

In this project, I modelled an ordinary differential equation model with a time lag, using the SIR infectious disease model. I investigated the influence of the time lag of publicity on the peak of infected patients and the dynamic properties of infectious disease models.

WORK EXPERIENCE

01/09/2023 – 12/2024 Guangzhou, China

UNIVERSITY TEACHING ASSISTANT SUN YAT-SEN UNIVERSITY, SCHOOL OF SYSTEMS SCIENCE AND ENGINEERING

- Teaching assistant of Design of Experiments and Uncertainty Theory.
- Teaching Uncertainty in Machine Learning, including methods for utilizing uncertainty in deep learning and methods for utilizing uncertainty in reinforcement learning.

01/02/2023 – 01/07/2023 Guangzhou, China

STUDENT WORK ASSISTANT SUN YAT-SEN UNIVERSITY, SCHOOL OF SYSTEMS SCIENCE AND ENGINEERING

- Manage the salary distribution of student assistants and teaching assistants.
- Review the theses of students and teachers.
- Write and send college notifications, such as meeting notifications and college activities.

01/02/2023 – 01/07/2023 Guangzhou, China

UNIVERSITY TEACHING ASSISTANT SUN YAT-SEN UNIVERSITY, SCHOOL OF SYSTEMS SCIENCE AND ENGINEERING

- Teaching assistant of Introduction to System Science.
- Correction of homework after class.
- Experimental course teaching with Python and Netlogo. Teaching how to use Netlogo for simple multi-agent system experiments and implement multi-agent reinforcement learning with Python.

LANGUAGE SKILLS

Mother tongue(s): **CHINESE**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Linux (Terminal Commands, Bash/Shell) | Python (PyROOT, RDataFrame; ML: Keras, TensorFlow) | c c++ ccc | programming: Python, MATLAB and SQL