Jinxin Liu

Deep Reinforcement Learning

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Education 教育

Zhejiang University, Westlake University 2019.09 - 2024.06
Ph.D., Computer Science Hangzhou, China
★ Zhejiang University & Westlake University Joint Ph.D. Program
★ Advisor: Prof. Donglin Wang

Chongqing University of Posts and Telecommunications 2015.09 - 2019.06
B.Eng., Communications Engineering Chongqing, China
★ Cumulative GPA: 3.8/4.0 Rank: 1/42 (*for **four** consecutive years*)

Research Interests 研究经历

★ **Deep Reinforcement Learning (RL)**: focusing on general and ready-to-be-deployed RL algorithms, *i.e.,* imitation learning, reward-free RL, unsupervised RL (learning skills), and RL in real-world tasks (games).
★ **Planning and Inference**: offline RL, offline-to-online RL, embodied agent, and design from data.
★ **Distribution Shift**: RL dynamics/embodyment adaptation, multi-goal RL, sim2real, and sample-efficient RL.

Selected Preprints 最新工作

[1] **Jinxin L**, Li H, Yachen K, Zifeng Z, Donglin W, and Huazhe X. [Under review]
CEIL: Generalized Contextual Imitation Learning. PDF

[2] **Jinxin L**, Hongyin Z, Zifeng Z, Yachen K, Donglin W, and Bin W. [Under review]
Design from Policies: Conservative Test-Time Adaptation for Offline Policy Optimization. PDF

[3] **Jinxin L**, Ziqi Z, Zhenyu W, Zifeng Z, Yachen K, Sibo G, and Donglin W. [Under review]
Beyond OOD State Actions: Supported Cross-Domain Offline Reinforcement Learning. PDF

[4] **Jinxin L**, Lipeng Z, Li H, and Donglin W. [Under review]
CLUE: Calibrated Latent Guidance for Offline Reinforcement Learning. PDF

Selected Publications 部分文章

[1] **Jinxin L**, Hongyin Z, and Donglin W. [ICLR, 2022]
DARA: Dynamics-Aware Reward Augmentation in Offline Reinforcement Learning. PDF

[2] **Jinxin L**, Donglin W, Qiangxing T, and Zhengyu C. [AAAI, 2022]
Learn Goal-Conditioned Policy with Intrinsic Motivation for Deep Reinforcement Learning. PDF

[3] **Jinxin L**, Hao S, Donglin W, Yachen K, and Qiangxing T. [NeurIPS, 2021]
Unsupervised Domain Adaptation with Dynamics-Aware Rewards in Reinforcement Learning. PDF

[4] Zifeng Z, Kun L, **Jinxin L**, Donglin W, and Yilang G. [ICLR, 2023]
Behavior Proximal Policy Optimization. PDF

[5] Yao L, **Jinxin L**, Zhentao T, Bin W, Jianye H, and Ping L. [ICML, 2023]
ChiPFormer: Transferable Chip Placement via Offline Decision Transformer. PDF

[6] Yachen K, Diyuan S, **Jinxin L**, Li H, and Donglin W. [ICML, 2023]
Beyond Reward: Offline Preference-Guided Policy Optimization. PDF

[7] Qiangxing T, Guanchu W, **Jinxin L**, Donglin W, and Yachen K. [IJCAI, 2020]
Independent Skill Transfer for Deep Reinforcement Learning. PDF

[8] Qiangxing T, **Jinxin L**, Donglin W, and Ao T. [CIKM, 2019]
Time Series Prediction with Interpretable Data Reconstruction. PDF

Internship Experience 实习经历

★ Research Intern (2022.06 - 2022.10) Noah's Ark Lab, Huawei

Finished with two papers on [1] **chip placement tasks** and [2] **standard offline reinforcement learning tasks**:

[1] We proposed ChiPFormer that can exploit offline placement designs to learn transferable policies, promote effective finetuning for unseen chip circuits, and *reduce the placement runtime from hours to minutes*. PDF

[2] We proposed Design fROm Policies that decouples the iterative bi-level offline RL from the offline training phase, *forming a non-iterative bi-level paradigm and avoiding the iterative error propagation over two levels.* PDF

★ Visiting Student (2018.10 - 2019.05) Westlake University

Early-stage research training: finished with two papers (1st author) on time series prediction: [PDF] & [PDF].

Academic Services 学术

★ Talks

[1] *Beyond Design from Data: Design from Policies is All You Need* Ali Cloud, Alibaba

[2] *Diffusion-Guided Diversity for Offline RL* Noah's Ark Lab, Huawei

[3] *Control as Inference: A General Review* Second Research Institute of CASIC

[4] *Unsupervised Reinforcement Learning for Skill Discovery* Westlake Robot Learning Symposium

[5] *Hi, Robot: Training a Versatile Robot from Scratch* Talk to the Future, Westlake University

[6] *Time Series Prediction with Interpretable Data Reconstruction* Zhejiang University

★ Teaching

[1] Deep Reinforcement Learning Head TA in Fall 2021 and Spring 2023

★ Conference Reviewer

ICML, ICLR, NeurIPS, IJCAI, AAAI, KDD, and IROS. Academic Services

Research Project 研究课题

★ Government Sponsored Research

[1] NSFC General Program (*Deep RL on real quadruped robot*) Grant No. 62176215

[2] National Science and Technology Innovation 2030 - *Major Project* Grant No. 2022ZD0208800

[3] Development of the Blind-Guiding Quadruped Robot System Hangzhou 2022 Asian Games

★ Company Sponsored Research

[1] Machine Learning and Robot Behavioral Learning Bright Dream Robotics, Guangdong

[2] Quadruped Robot Platform on Farmland Protection Westlake Uni.-Muyuan Joint Research Inst.

[3] Development of Low Cost Navigation Equipment Westlake Uni.-Muyuan Joint Research Inst.

Responsible for Core Members

○ RL theory: research on RL sample efficiency, domain adaptation, and sim2real issues.

○ Real-world robot deployment: Deploying RL algorithms on a robotic arm and a quadruped robot.

Selected Awards & Honors 荣誉奖励

Outstanding Student (<10%) 2022

Su-Wu Scholarship (<5%) 2021

Best Poster Award at WISE 2021 (<5%) 2021

The only Grand Prize at Electronic Design Innovation Challenge (<1%) 2018

Advanced Individuals of Scientific and Technological Innovation (<5%) 2018

Second Prize of National Mobile Internet Application Development Competition (<10%) 2018

National Scholarship (<5%) 2017

First Prize of China Undergraduate Mathematical Contest in Modeling (Chongqing; <5%) 2017

National Encouragement Scholarship (<10%) 2016