XIE MING (Bruce Xie)

Mobile Phone：+86-15801727976 Email：xieminghack@163.com

Address: Zhang jiang Town, Pudong New Area, Shanghai

Education Background

Fudan University | Computer Science | Master   **2020.09-2023.01**

✧ **Core courses**: Statistics, Image Processing, Signal and System, Computer Vision, Pattern Recognition, Numerical Analysis

✧ **Self-Taught courses**: Deep Learning, Reinforcement Learning, Applied Numerical Algebra, Numerical Optimization, Convex Optimization, Operational Research, Deep Recommendation Systems, Network Theory

Tong Ji University | Civil Engineering Bridge | Undergraduate   **2015.09-2019.06**

✧ **Core courses**: Data Structures, Probability theory, Mechanics of Elasticity, Structural Mechanics, Fluid Mechanics, Steel Structures

✧ **Self-Taught courses**: Statistical Learning Methods, Multivariate Statistical Analysis, Computer networks, Operating Systems, Principles of Computer Composition, SPSS+R, Multivariate Statistical Analysis

Internship Experience

Mei Tuan | Algorithm Strategy Engineer   **2023.01-Present**

✧ **Full-Chain Strategy Optimization for Intelligent Client-Side Applications**: As part of the team responsible for intelligent client-side applications, I spearheaded the collection and analysis of users' behaviors toward various products in the store, including viewing, clicking, and adding to cart. Through the construction of a novel recall mechanism, successfully boosted CTR for suggested search terms by 13% and enhanced the growth of DAU in search by 0.08%.

✧ **Strategy Optimization for Word Service Chain**: In terms of word services, with the method of attribution of samples, I successfully improved the CTR for suggested search terms by 2.07%, drove an increase of 0.33% in the CTR for search discovery, and promoted the growth of DAU in search by 0.07% through strategic efforts.

IDEA | Intelligent optimization algorithm engineer   **2022.09-2022.12**

✧ **Medial Axis Design**: From the pre-processed drawing data, an extended polygon zone of Minkowsky Sum was created, and the road's feasible region was triangulated. For the overall design of the road, the medial axis was adopted.

Shanghai Jump Network Technology Company | RL Research Assistant   **2022.01-2022.06**

✧ **PPO distributed architecture**: With the goal of achieving the super-human effect of reinforcement learning on MOBA games domain, constructed PPO distributed architecture. The architecture used Beta-distributed output, new optimizer for Non-IID data, and loss function for Multi-Continuous action Spaces. Decoupled sampler, memory, and trainer to enhance the scalability. It had been achieved to reduce the training time from 13 hours to less than 2 hours in MicroRTS environment.

✧ **Ablation experiment**: With the goal of improving the experimental results, read dozens of derivative papers on PPO, took the lead in analyzing the influence of PPO network architectures and hyperparameters, designed ablations, and analyzed the effect of each hypermeter on PPO. Combined with 13 PPO techniques from reference papers to form Rainbow patterns similar to DQN. SOTA level was achieved in 15 Mujuco continuous action environments and 53 Atari discrete action environments.

Project experience

Deep recommendation system based on Actor2Critic   **2022.02 – 2022.05**

✧ With the goal of maximizing long-term value by recommending to users on the movie recommended scenario, the Actor2Critic reinforcement learning architecture was constructed. To train the best recommendation agent, reward functions was design by comparing various rating function, the loss function with regularization was adopted. Actor2Critic outperformed DeepFM and collaborative filtering based on Matrix decomposition by 12% and 19% on AUC metric.

Financial trading system based on DQN   **2021.04 – 2021.07**

✧ With the goal of designing a trading strategy for futures contracts, the DQN architecture was constructed by establishing a reward function that reflects market volatility and trading positions. From 2011 to 2019, tested the 50 most liquid futures contracts and looked at how the performance of various asset classes has evolved. DQN outperformed the traditional time series momentum method by 13% in the rate of return evaluation system.

Academic experience

Reinforcement learning enhances exploration research   **2021.10 – 2022.10**

✧ With the goal of increasing exploration efficiency and dynamically exiting exploration. In the area of value-based RL's exploring and exploiting environment. The trend and correlation of various variables in the training process were thoroughly examined. The importance index of exploration was developed, a new sampling strategy was built, and the network architecture was reconstructed. Compared to the baseline, the performance was 50% better and more stable.