Deep Reinforcement Learning That Matters Arxiv

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Deep Reinforcement Learning That Matters

Deep Reinforcement Learning that Matters - arXiv

cussion for future works to ensure that deep reinforcement learning is reproducible and continues to matter Technical Background This work focuses on several model-free policy gradient algorithms with publicly available implementations which appear frequently in the literature as baselines for compar-ison against novel methods

Deep Reinforcement Learning that Matters

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Deep Reinforcement Learning

Hope for Reinforcement Learning: Brute-force propagation of outcomes to knowledge about states and actions This is a kind of brute-force "reasoning" Hope for Deep Learning + Reinforcement Learning: General purpose artificial intelligence through efficient generalizable learning of ...

Reproducibility and Replicability in Deep Reinforcement ...

Henderson, Peter, et al "Deep reinforcement learning that matters" arXiv preprint arXiv:170906560 (2017) REUSABLE material (software, datasets, experimental platforms) help us REPRODUCE, REPLICATE, REPEAT scientific methods to establish the ROBUSTNESS of the findings

Reproducible, Reusable, and Robust Reinforcement Learning

Deep Reinforcement Learning that Matters AAAI 2017 (+updates) # of papers per year » Simple random search of static linear policies is competitive for reinforcement learning » Deep Reinforcement Learning in a Handful of Trials using Probabilistic Dynamics Models » ...

Deep Reinforcement Learning, Decision Making, and Control

Beyond learning from reward •Basic reinforcement learning deals with maximizing rewards •This is not the only problem that matters for sequential decision making! •We will cover more advanced topics •Learning reward functions from example (inverse reinforcement learning)

Deep Reinforcement Learning applied to the game Bubble ...

ment learning and deep learning seems very promising, since deep learning can extract features from the data and reinforcement learning can invent the optimal policy The possibilities of deep reinforcement learning for societal matters seem endless For example, the algorithm could contribute to invent a superhuman policy for self-driving cars

Process Control using Deep Reinforcement Learning

and natural language processing that followed the success of deep learning Human level control has been attained in games and physical tasks by combining deep learning with reinforcement learning They were also able to learn the complex go game which has states more than number of ...

DeepJS: Job Scheduling Based on Deep Reinforcement ...

based on deep reinforcement learning Instead of directly using deep reinforcement learning model for job scheduling[4][11], DeepJS is embedded in the framework of the bin packing problem In solving a bin packing problem, fitness is calculated which describe how a machine and a task is matched in order to

Curriculum Learning for Heterogeneous Star Network ...

sentation learning in heterogeneous star networks, aiming to learn a sequence of edge types for node representation learning • We formulate the problem as a Markov decision process, and propose an approach based on deep reinforcement learning • We conduct experiments on ...

IMPLEMENTATION MATTERS IN DEEP POLICY G: A C STUDY ...

Under review as a conference paper at ICLR 2019 IMPLEMENTATION MATTERS IN DEEP POLICY GRADIENTS: A CASE STUDY ON PPO AND TRPO Anonymous authors Paper under double-blind review ABSTRACT We study the roots of algorithmic progress in deep policy gradient algorithms

Reinforcement Learning

• These can be cast of problems of reinforcement learning • There is no supervisor, only a reward signal -Did you get home sooner -Did you win the game -Did you make money? • ie nobody telling the agent "you did well" • Reward is a scalar -a single number, may be negative -Game was won/lost (binary) -Time taken to arrive

Optimizing Degree Distributions of LT-based Codes With ...

Certainly, deep learning can not be applied to channel coding directly due to the strict demand on latency and throughput; therefore, we consider its application for optimizations of existing coding mechanisms In this work, we try to optimize degree distributions by using deep reinforcement learning techniques, which to a certain extent

Final Project Presentations - MIT Deep Learning 6.S191

Deep Learning! But why? We will try to run the models on both time domain and frequency domain Deep Reinforcement Learning for Radiation Therapy Planning Group 8: Susu Yan (Listener), Michelle Jiang (Credit) and why it matters? 8% of men are colorblind [1] 1 in every 200 women is colorblind [1]

Reinforcement Learning

I NN approximation Deep Reinforcement Learning What matters I Linear Learning complexity required to scale up to large problems I Self-play to

acquire examples in critical regions I Online learning; dealing with non-stationary target value function 21/41

Real-time Motion Generation for Imaginary Creatures Using ...

machine learning techniques Deep reinforcement learning (DeepRL) can control a creature's motion by predicting future rewards; however, it takes a long time toconverge, and the result is slightly unstable, especially in a continuous action space [Henderson et al 2018] As our goal is to observe how creatures learn to move while inheriting and

DeepWiERL: Bringing Deep Reinforcement Learning to the ...

in deep reinforcement learning (DRL) have recently stirred up the wireless research community, now rushing to apply DRL to address a variety of critical issues, such as handover and power management in cellular networks [4, 5], dynamic spec-trum access [6–9], resource allocation/slicing/caching [10–

Introduction to Deep Reinforcement Learning

•Time really matters (sequential, non iid data) •Agent's actions affect the subsequent data it receives Goal: Maximize Cumulative Reward •Actions may have long term consequences •Continuous control with deep reinforcement learning •Deep Reinforcement Learning with Double Q-learning DeepTraffic: Driving Fast through Dense Traffic with Deep ...

Lex Fridman fridman@mitedu GTC 2017 May 11 DeepTraffic: Driving Fast through Dense Traffic with Deep Reinforcement Learning Americans spend 8 billion hours stuck in traffic every year