# Deep Reinforcement Learning Nanodegree Links

Course Description
Knowledge
Forums
DRLND Office Hours Calendar1
Textbook: Reinforcement Learning: An Introduction - second edition - by Richard S. Sutton and Andrew G. Barto
github
Special Topics: Dynamic Programming
DRLND Leaderboard
openai / gym Leaderboard
Waffle (issues)
ZenDesk
Site Status updates
Deadlines (P1: Aug 28, P2: Oct 16, P3: Oct 30, Term ends: Oct 30)
Project 1 rubric
Project 2 rubric

Sections below: Articles | Blogs | Books | Cartoons | Cheatsheets | Cloud | Conferences | Community | Competitions | Courses

## Articles

Reinforcement Learning Doesn't Work Yet.
Why RL is flawed
How to fix RL
Evolution Strategies as a Scalable Alternative to Reinforcement Learning
Evolutionary algorithm outperforms deep-learning machines at video games
Reinforcement Learning or Evolutionary Strategies? Nature has a solution: Both.
Metacar
The Essential Guide to Training Data
Machine Learning for Humans
Math for Deep Learning
Dreaming about Driving
How To Learn Data Science If You're Broke
Beyond DQN/A3C: A Survey in Advanced Reinforcement Learning
How to rapidly test dozens of deep learning models in Python
How the Lottery Ticket Hypothesis is Challenging Everything we Knew About Training Neural Networks

## Blogs

Resources for Deep Reinforcement Learning
My Curated List of AI and Machine Learning Resources from Around the Web
DeepMind
- Open sourcing TRFL: a library of reinforcement learning building blocks
OpenAI
- Reinforcement Learning with Prediction-Based Rewards
- Spinning Up in Deep RL
Tensorflow
The Gradient
UC Berkeley AI Research
Andrej Karpathy blog (older)
Deep Reinforcement Learning: Pong from Pixels
Andrej Karpathy blog (newer)
Richard S. Sutton
Moritz Hardt
Adrian Colyer: the morning paper
Towards Data Science
- What's New in Deep Learning Research: Stronger Learning with Differentiable Plasticity
Algorithmia
Locally Optimistic: The Blacker the Box
Devan Stormont
Google AI Blog
Google Developers
- Rules of Machine Learning: Best Practices for ML Engineering
- Google Developers Launchpad introduces The Lever, sharing applied-Machine Learning best practices
The Lever
The 5 Best Machine Learning GitHub Repositories & Reddit Threads from August 2018
Synced: AI Industry & Technology Review
Facebook accelerates AI development with new partners and production capabilities for PyTorch 1.0
RL—The Math behind TRPO & PPO
Adventures in Unity ML-Agents

## Books

Deep Reinforcement Learning Hands-On
Grokking Deep Reinforcement Learning
The Definitive C++ Book Guide and List
Multi-Agent Machine Learning: A Reinforcement Approach

| | |
|---|---|
| `http://bit.ly/drlndlinks` | Please Insert > Row and add new links freely |
| | |
| https://www.udacity.com/course/deep-reinforcement-learning-nanodegree--nd893 | |
| https://knowledge.udacity.com/ | |
| https://discussions.udacity.com/ | |
| https://calendar.google.com/calendar/embed?src=knowlabs.com_gu20ftpeljmm1u9evmtn8vum1k@group.calendar.google.com | |
| https://s3-us-west-1.amazonaws.com/udacity-drlnd/bookdraft2018.pdf | https://github.com/ShangtongZhang/reinforcement-learn |
| https://github.com/udacity/deep-reinforcement-learning | |
| https://classroom.udacity.com/nanodegrees/nd893/parts/23d1307b-b908-436f-bdfe-78b6c5712b04/modules/9765795d-fea0-4 | 8 Hours of Extracurricular Content here! |
| https://docs.google.com/spreadsheets/d/1hl3RCLm21JXmcolyomYKgyXJNT9vv2bn_iFGJQw3n7I/edit#gid=0 | <<< Add your best project scores and write ups here |
| https://github.com/openai/gym/wiki/Leaderboard | |
| https://waffle.io/udacity/drlnd-issues-tracker | |
| https://udacity.zendesk.com/hc/en-us/requests/new | |
| https://twitter.com/udacity | |
| https://classroom.udacity.com/nanodegrees/nd893/parts/8f607726-757e-4ef5-8b64-f2368755b89a/modules/a85374fa-6a60-42 | |
| https://review.udacity.com/#!/rubrics/1889/view | |
| https://review.udacity.com/#!/rubrics/1890/view | https://youtu.be/2N9EoF6pQyE |
| | |
| \| Github \| Glossary \| Infographics \| Jobs \| Notebooks \| Papers \| Patents \| Slides \| Tools \| Videos | |
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| https://www.alexirpan.com/2018/02/14/rl-hard.html | |
| https://thegradient.pub/why-rl-is-flawed/ | RL works when problem is deterministic, discrete, static, |
| https://thegradient.pub/how-to-fix-rl/ | Combine reinforcement learning and meta learning - me |
| https://blog.acolyer.org/ | |
| https://www.technologyreview.com/s/611568/evolutionary-algorithm-outperforms-deep-learning-machines-at-video-games/ | |
| https://medium.com/beyond-intelligence/reinforcement-learning-or-evolutionary-strategies-nature-has-a-solution-both-8bc80db | |
| https://www.metacar-project.com/ | |
| https://visit.figure-eight.com/rs/416-ZBE-142/images/The%20Essential%20Guide%20to%20Training%20Data.pdf | |
| https://www.dropbox.com/s/e38nil1dnl7481q/machine_learning.pdf?dl=0 | |
| http://leiluoray.com/2018/08/29/Deep-Learning-Math/ | |
| https://wayve.ai/blog/dreaming-about-driving-imagination-rl | |
| https://towardsdatascience.com/how-to-learn-data-science-if-youre-broke-7ecc408b53c7 | |
| https://towardsdatascience.com/advanced-reinforcement-learning-6d769f529eb3 | Deep RL models are really hard to train, period. |
| https://towardsdatascience.com/how-to-rapidly-test-dozens-of-deep-learning-models-in-python-cb839b518531 | |
| https://towardsdatascience.com/how-the-lottery-ticket-hypothesis-is-challenging-everything-we-knew-about-training-neural-net | |
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| | |
| https://medium.com/@yuxili/resources-for-deep-reinforcement-learning-a5fdf2dc730f | Over 120 links ... |
| https://medium.com/machine-learning-in-practice/my-curated-list-of-ai-and-machine-learning-resources-from-around-the-web-9 | |
| https://deepmind.com/blog/ | |
| https://deepmind.com/blog/trfl/ | https://github.com/deepmind/trfl/ |
| https://blog.openai.com/ | see OpenAI tab |
| https://blog.openai.com/reinforcement-learning-with-prediction-based-rewards/ | |
| https://blog.openai.com/spinning-up-in-deep-rl/ | Includes examples of RL code, educational exercises, d |
| https://medium.com/@tensorflow | |
| https://thegradient.pub/ | Stanford Artificial Intelligence Laboratory (SAIL) |
| http://bair.berkeley.edu/blog/ | |
| http://karpathy.github.io/ | |
| http://karpathy.github.io/2016/05/31/rl/ | |
| https://medium.com/@karpathy | 30K followers |
| http://incompleteideas.net/ | |
| http://blog.mrtz.org/ | |
| https://blog.acolyer.org/ | |
| https://towardsdatascience.com/ | Now featuring one of our own: Partha Pratim Neog |
| https://towardsdatascience.com/whats-new-in-deep-learning-research-stronger-learning-with-differentiable-plasticity-9b793a5e | |
| https://blog.algorithmia.com/introduction-to-reinforcement-learning/ | |
| https://www.locallyoptimistic.com/post/the-blacker-the-box/ | |
| https://voyageintech.com/ | DRLND Student |
| https://ai.googleblog.com/ | |
| https://developers.googleblog.com/ | |
| https://developers.google.com/machine-learning/guides/rules-of-ml | |
| https://developers.googleblog.com/2018/08/google-developers-launchpad-introduces.html | |
| https://medium.com/the-lever | |
| https://www.analyticsvidhya.com/blog/2018/09/best-machine-learning-github-repositories-reddit-threads-august-2018/ | |
| https://syncedreview.com/ | |
| https://code.fb.com/ai-research/facebook-accelerates-ai-development-with-new-partners-and-production-capabilities-for-pytorc | PyTorch 1.0 |
| https://medium.com/@jonathan_hui/rl-the-math-behind-trpo-ppo-d12f6c745f33 | |
| http://adventuresinunitymlagents.com/ | By Mike Richardson and Patrick Nalepka of DRLND |
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| https://www.amazon.com/gp/product/1788834240/ref=oh_aui_detailpage_o00_s00?ie=UTF8&psc=1#customerReviews | |
| https://www.manning.com/books/grokking-deep-reinforcement-learning | https://github.com/mimoralea/gdrl |
| https://stackoverflow.com/questions/388242/the-definitive-c-book-guide-and-list | |
| https://www.amazon.com/Multi-Agent-Machine-Learning-Reinforcement-Approach/dp/111836208X | |
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https://drive.google.com/file/d/1xeUDVGWGUUv1-ccUMAZHJLej2C7aAFWY/view

https://github.com/Unity-Technologies/ml-agents/blob/master/docs/Learning-Enviro

fully observable, fully-known, single-agent, episodic, cheap and easy to simulate, easy to score

ta-reinforcement learning

ocumentation, and tutorials

Deep Reinforcement Learning

# Deep Reinforcement Learning Nanodegree Links

Course Description

## Cartoons

Intuitive RL: Intro to Advantage-Actor-Critic (A2C)

## Cheatsheets

Cheat Sheets for AI, Neural Networks, Machine Learning, Deep Learning & Big Data

C++ Python Cheatsheet

Cheat Sheets for AI, Neural Networks, Machine Learning, Deep Learning & Big Data

## Cloud

List of Deep Learning Cloud Service Providers

Tenzar

Floydhub

Seedbank

TensorFlow Hub

Google AutoML

Nimblebox

VectorDash

## Conferences

~~NIPS 2017 - videos~~

~~ICML 2018 - Stockholm - July 10-15, 2018~~

~~Artificial Intelligence Conference - San Francisco - Sep 5-7, 2018 - $1895+~~

Deep Learning Summit - Toronto - October 25-26, 2018 - C$695+

NIPS 2018 - Montréal - December 3-8, 2018 - SOLD OUT

Deep Learning Summit - San Francisco - January 24 - 25, 2019

## Community

DRLNG Students

Research Discussions

How to Lead a Discussion of Scientific Journal Articles

Leading a discussion of a scientific paper

## Competitions

Pommerman

Halite

NIPS 2018 Competition Track

~~OpenAI Retro Contest~~

## Courses

TensorFlow for Deep Learning

Stanford

Thomas Simonini : Deep Reinforcement Learning Course

- An Introduction to Reinforcement Learning

- Diving deeper into Reinforcement Learning with Q-Learning

- An introduction to Q-Learning: reinforcement learning

- Curiosity-Driven Learning made easy Part I

Fellowship AI

UC Berkeley - Deep Reinforcement Learning

- Yousof of DRLND: Imitating Learning

Open Machine Learning Course

Machine Learning and Reinforcement Learning in Finance Specialization

Intro to Deep Learning with PyTorch

Łukasz Kaiser "Deep Learning: The Good, the Bad and the Ugly"

## Github

30 Amazing Machine Learning Projects for the Past Year (v.2018)

alpha-zero-general: a clean implementation based on AlphaZero for any game in any framework

An AI agent learning to walk in gym's BipedalWalker environment

Deep Learning with PyTorch

Deep reinforcement learning GPU libraries for NVIDIA Jetson with PyTorch, OpenAI Gym, and Gazebo robotics simulator

Deep reinforcement learning GPU libraries for NVIDIA Jetson with PyTorch, OpenAI Gym, and Gazebo robotics simulator.

Deep RL Arm Manipulation

Distributed evolution

Evostra: Evolution Strategy for Python

GAN Lab

Gibson Environment: Real-World Perception for Embodied Agents

Google: Dopamine is a research framework for fast prototyping of reinforcement learning algorithms.

Highly modularized implementation of popular deep RL algorithms in PyTorch

Large-Scale Study of Curiosity-Driven Learning

Mantra: A high-level, rapid development framework for machine learning projects

PlaidML is the easiest, fastest way to learn and deploy deep learning on any device

Random search, hill climbing, policy gradient for CartPole

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| `http://bit.ly/drlndlinks` | Please Insert > Row and add new links freely |
| | |
| https://www.udacity.com/course/deep-reinforcement-learning-nanodegree--nd893 | |
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| https://hackernoon.com/intuitive-rl-intro-to-advantage-actor-critic-a2c-4ff545978752 | |
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| https://becominghuman.ai/cheat-sheets-for-ai-neural-networks-machine-learning-deep-learning-big-data-678c51b4b463 | |
| https://d17h27t6h515a5.cloudfront.net/topher/2018/January/5a4d862b_c-python-cheatsheet/c-python-cheatsheet.pdf | |
| https://becominghuman.ai/cheat-sheets-for-ai-neural-networks-machine-learning-deep-learning-big-data-678c51b4b463 | |
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| https://towardsdatascience.com/list-of-deep-learning-cloud-service-providers-579f2c769ed6 | 30 providers listed |
| https://www.tenzar.com/ | |
| https://www.floydhub.com/ | Creating a 'Run on FloydHub' Button: |
| http://tools.google.com/seedbank/ | |
| **https://www.tensorflow.org/hub/** | |
| https://cloud.google.com/automl/ | Train high-quality custom machine learning models with |
| https://nimblebox.ai/ | |
| https://vectordash.com/ | |
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| https://www.facebook.com/pg/nipsfoundation/videos/?ref=page_internal | |
| https://medium.com/@jianzhang_23841/a-comprehensive-summary-and-categorization-on-reinforcement-learning-papers-at-ic | |
| https://conferences.oreilly.com/artificial-intelligence/ai-ca/public/register | https://www.youtube.com/watch?v=0f5ytRgDM7g&list=P |
| https://www.re-work.co/events/deep-learning-summit-toronto-canada-2018 | |
| https://nips.cc/ | https://syncedreview.com/2018/09/04/nips-tickets-sell-ou |
| https://www.re-work.co/events/deep-learning-summit-san-francisco-2019 | |
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| https://docs.google.com/spreadsheets/d/1veKepeuZ4pFSLO8CIdZ7JSkiym41f-e02HOMCfUiM-c/edit#gid=0 | Includes github and blog links |
| https://docs.google.com/spreadsheets/d/1tUneDHaS-G3JJQRYvM_eTGc4PWpJOvvBwvrkm-CIBrQ/edit#gid=0 | https://youtu.be/hitWL7heZio |
| https://uvic470ecology.weebly.com/uploads/1/2/4/4/12445281/470_howtoleaddiscussion.pdf | |
| https://arthropodecology.com/2015/01/21/leading-a-discussion-of-a-scientific-paper/ | |
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| https://www.pommerman.com/ | |
| https://halite.io/ | |
| https://nips.cc/Conferences/2018/CompetitionTrack | |
| https://contest.openai.com/2018-1/ | |
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| | |
| https://www.udacity.com/course/intro-to-tensorflow-for-deep-learning--ud187 | Free class from Google and Udacity |
| https://online.stanford.edu/courses | |
| https://simoninithomas.github.io/Deep_reinforcement_learning_Course/ | Udacity alum! |
| https://medium.freecodecamp.org/an-introduction-to-reinforcement-learning-4339519de419 | |
| https://medium.freecodecamp.org/diving-deeper-into-reinforcement-learning-with-q-learning-c18d0db58efe | |
| https://medium.freecodecamp.org/an-introduction-to-q-learning-reinforcement-learning-14ac0b4493cc | |
| https://towardsdatascience.com/curiosity-driven-learning-made-easy-part-i-d3e5a2263359 | |
| https://fellowship.ai/ | |
| http://rail.eecs.berkeley.edu/deeprlcourse/ | |
| https://youtu.be/tV1vFtoJCxw | https://drlnd.slack.com/archives/C9KU4GN6S/p1535092 |
| https://github.com/Yorko/mlcourse_open | Has not covered RL ... yet |
| https://www.coursera.org/specializations/machine-learning-reinforcement-finance | |
| https://www.udacity.com/course/deep-learning-pytorch--ud188 | |
| https://www.youtube.com/playlist?list=PLVjVSqmQgPG-yy8vUHQXnQ7-qhsbKjd9s | |
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| https://medium.mybridge.co/30-amazing-machine-learning-projects-for-the-past-year-v-2018-b853b8621ac7 | https://github.com/PAIR-code/facets |
| https://github.com/suragnair/alpha-zero-general | |
| https://github.com/alirezamika/bipedal-es | |
| https://github.com/udacity/DL_PyTorch | |
| https://github.com/dusty-nv/jetson-reinforcement | |
| https://github.com/dusty-nv/jetson-reinforcement | |
| https://github.com/udacity/RoboND-DeepRL-Project | |
| https://github.com/openai/evolution-strategies-starter | |
| https://github.com/alirezamika/evostra | |
| https://github.com/poloclub/ganlab | https://poloclub.github.io/ganlab/ |
| https://github.com/StanfordVL/GibsonEnv | http://gibsonenv.stanford.edu/ |
| https://github.com/google/dopamine | https://ai.googleblog.com/2018/08/introducing-new-fram |
| https://github.com/ShangtongZhang/DeepRL.git | |
| https://github.com/openai/large-scale-curiosity | |
| https://github.com/RJT1990/mantra | https://www.youtube.com/watch?v=w5mwhKCHKX8 |
| https://github.com/plaidml/plaidml | https://techcrunch.com/2018/08/16/intel-buys-deep-learr |
| https://github.com/kvfrans/openai-cartpole | http://kvfrans.com/simple-algoritms-for-solving-cartpole/ |

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https://docs.floydhub.com/guides/run_on_floydhub_button/

minimum effort and machine learning expertise.

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t-in-less-than-12-minutes/

https://storage.googleapis.com/gibson_material/Gibson_CVPR2018.pdf

ework-for-flexible.html

ing-startup-vertex-ai-to-join-its-movidius-unit

| Deep Reinforcement Learning Nanodegree Links |
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| Course Description |
| RL-Adventure-2: Policy Gradients |
| rllab is a framework for developing and evaluating reinforcement learning algorithms, fully compatible with OpenAI Gym. |
| Simple example of DQN for Unity using Keras |
| Stochastic Ensemble Value Expansion |
| TensorFlow Reinforcement Learning |
| TensorForce: A TensorFlow library for applied reinforcement learning |
| Udacity Deep ReInforcement Learning Nanodegree Playground |
| Unity Machine Learning Agents Toolkit |
| Unity Marathon Environments |
| World models |
| |
| OpenAI Baselines is a set of high-quality implementations of reinforcement learning algorithms. |
| - PRE Prioritized Replay |
| - A2C Asynchronous Actor-Critic |
| - DDPG  Deep Deterministic Policy Gradients |
| |
| **Glossary** |
| NVIDIA Deep Learning Glossary |
| Google: Machine Learning Glossary |
| An A.I. Glossary (NY Times) |
| |
| **Hardware** |
| Which GPU(s) to Get for Deep Learning |
| |
| **Infographics** |
| A Complete Guide on Getting Started with Deep Learning in Python |
| Reinforcement Learning Coach by Intel® AI Lab - Supported Algorithms |
| **Jobs** |
| ~~OpenAI - Machine Learning Engineer~~ |
| Udacity Alumni Slack |
| |
| **Notebooks** |
| Dopamine Colab (Siraj Raval) |
| |
| **Papers - a few "meta" Paper sites (shaded rows), then alphabetical** |
| Deep Reinforcement Learning |
| Deep Reinforcement Learning: An Overview |
| OpenAI: Key Papers in Deep RL |
| reddit MachineLearning |
| Arxiv Sanity Preserver |
| Distill |
| How to Read and Understand a Scientific Paper: A Step-by-Step Guide for Non-Scientists |
| A Brief Survey of Deep Reinforcement Learning |
| A Distributional Perspective on Reinforcement Learning |
| Asynchronous Methods for Deep Reinforcement Learning |
| Augmented Random Search (ARS) |
| Autonomous Driving in Reality with Reinforcement Learning and Image Translation |
| Benchmarking Deep Reinforcement Learning for Continuous Control |
| Black-Box Data-efficient Policy Search for Robotics |
| Combined Reinforcement Learning via Abstract Representations |
| Continuous Control With Deep Reinforcement Learning |
| Deep Recurrent Q-Learning for Partially Observable MDPs |
| Deep Reinforcement Learning |
| Deep Reinforcement Learning in Portfolio Management |
| Deep Reinforcement Learning that Matters |
| Deep Reinforcement Learning with Double Q-learning |
| Distributed Distributional Deterministic Policy Gradients |
| Dueling Network Architectures for Deep Reinforcement Learning |
| Emergence of Locomotion Behaviours in Rich Environments |
| Evolving simple programs for playing Atari games |
| Hierarchical Reinforcement Learning with the MAXQ Value Function Decomposition |
| High-dimensional Continuous Control Using Generalized Advantage Estimation |
| Human-level control through deep reinforcement learning |
| Is multiagent deep reinforcement learning the answer or the question? A brief survey |
| Issues in Using Function Approximation for Reinforcement Learning |
| Lessons Learned Reproducing a Deep Reinforcement Learning Paper |
| The Lottery Ticket Hypothesis: Finding Sparse, Trainable Neural Networks |
| Market Making via Reinforcement Learning |
| Meta-Gradient Reinforcement Learning |
| Model-Based Reinforcement Learning via Meta-Policy Optimization |

| `http://bit.ly/drlndlinks` | Please Insert > Row and add new links freely |
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| https://www.udacity.com/course/deep-reinforcement-learning-nanodegree--nd893 | |
| https://github.com/higgsfield/RL-Adventure-2 | |
| https://github.com/rll/rllab | |
| https://github.com/xkiwilabs/DQN_Unity_Keras | |
| https://github.com/tensorflow/models/tree/master/research/steve | https://arxiv.org/pdf/1807.01675.pdf |
| https://github.com/deepmind/trfl/ | |
| https://github.com/reinforceio/tensorforce | |
| https://github.com/RitwikSaikia/udacity_drln_playground | |
| https://github.com/Unity-Technologies/ml-agents | |
| https://github.com/Unity-Technologies/marathon-envs | |
| https://worldmodels.github.io/ | |
| | |
| https://github.com/openai/baselines | Updated A2C and PPO2 |
| https://github.com/openai/baselines/blob/master/baselines/deepq/replay_buffer.py | |
| https://github.com/openai/baselines/tree/master/baselines/a2c | |
| https://github.com/openai/baselines/tree/master/baselines/ddpg | |
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| https://www.nvidia.com/content/g/pdfs/nvidia-deeplearning-glossary-llkcmb.pdf | |
| https://developers.google.com/machine-learning/glossary/ | |
| https://www.nytimes.com/2018/10/18/business/an-ai-glossary.html | "Reinforcement Learning: A process where machines le |
| | |
| | |
| http://timdettmers.com/2018/08/21/which-gpu-for-deep-learning/ | |
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| https://s3-ap-south-1.amazonaws.com/av-blog-media/wp-content/uploads/2018/08/22.jpg | |
| https://github.com/NervanaSystems/coach/blob/master/img/algorithms.png | |
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| ~~https://www.linkedin.com/jobs/view/816826907/~~ | |
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| https://colab.research.google.com/drive/1sPOu0mmWh2mqZwNAjNf7qei094O3f1-r#scrollTo=mLcmGG387N5t | |
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| https://arxiv.org/abs/1810.06339 | 150 pages, major improvements to the overview below, |
| https://arxiv.org/pdf/1701.07274.pdf | 70 pages including Books \| Surveys and Reports \| Cours |
| https://spinningup.openai.com/en/latest/spinningup/keypapers.html | 98 linked papers in 12 categories |
| https://www.reddit.com/r/MachineLearning/ | https://youtu.be/SHTOI0KtZnU |
| http://www.arxiv-sanity.com/ | Serving last 50 000+ papers from cs.[CV\|CL\|LG\|AI\|NE]/s |
| https://distill.pub/ | Machine Learning Research Should Be Clear, Dynamic |
| https://www.huffingtonpost.com/jennifer-raff/how-to-read-and-understand-a-scientific-paper_b_5501628.html | https://violentmetaphors.com/2013/08/25/how-to-read-ar |
| https://arxiv.org/pdf/1708.05866.pdf | |
| https://arxiv.org/pdf/1707.06887.pdf | |
| https://arxiv.org/pdf/1602.01783.pdf | A2C A3C |
| https://arxiv.org/pdf/1803.07055.pdf | https://drlnd.slack.com/archives/C9KU4GN6S/p1533314 |
| https://arxiv.org/pdf/1801.05299.pdf | |
| https://arxiv.org/pdf/1604.06778.pdf | |
| https://arxiv.org/pdf/1703.07261.pdf | |
| https://arxiv.org/abs/1809.04506 | A new paper from Yoshua Bengio |
| https://arxiv.org/pdf/1509.02971.pdf | |
| https://arxiv.org/pdf/1507.06527.pdf | |
| https://arxiv.org/pdf/1810.06339.pdf | Yuxi Li (150 pages) |
| https://arxiv.org/pdf/1808.09940.pdf | Using PPO and DDPG for portfolio optimization |
| https://arxiv.org/pdf/1709.06560.pdf | |
| https://arxiv.org/pdf/1509.06461.pdf | |
| https://openreview.net/pdf?id=SyZipzbCb | D4PG starts from the DDPG algorithm and includes a nu |
| https://arxiv.org/pdf/1511.06581.pdf | |
| https://arxiv.org/pdf/1707.02286.pdf | |
| https://arxiv.org/abs/1806.05695 | Cartesian Genetic Programming (CGP) |
| https://arxiv.org/pdf/cs/9905014.pdf | |
| https://arxiv.org/pdf/1506.02438.pdf | |
| https://storage.googleapis.com/deepmind-media/dqn/DQNNaturePaper.pdf | https://www.cs.swarthmore.edu/~meeden/cs63/s15/natu |
| https://arxiv.org/pdf/1810.05587.pdf | |
| http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.73.3097&rep=rep1&type=pdf | |
| http://amid.fish/reproducing-deep-rl | |
| https://arxiv.org/pdf/1803.03635.pdf | KEY PAPER. Explains why initialization matters so muc |
| https://arxiv.org/pdf/1804.04216.pdf | |
| https://arxiv.org/pdf/1805.09801.pdf | |
| https://arxiv.org/pdf/1809.05214.pdf | |

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arn to do a new task like humans do — through a system of rewards and punishments"

this blog complement it: https://medium.com/@yuxili

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stat.ML

and Vivid. Distill Is Here to Help.

nd-understand-a-scientific-paper-2/

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https://github.com/qq303067814/Reinforcement-learning-in-portfolio-management-

https://www.youtube.com/playlist?list=PLFU7BiIwAjPDqsIL9OLm1z7_RXZA1Jyfj

ure15a.pdf

h in network performance: lucky subnets.

## Deep Reinforcement Learning Nanodegree Links

Course Description
Paper Collection of Multi-Agent Reinforcement Learning (MARL)
Multi-Agent Reinforcement Learning: A Report on Challenges and Approaches
Multi-task Deep Reinforcement Learning with PopArt
Neural Fitted Q Iteration - First Experiences with a Data Efficient Neural Reinforcement Learning Method
Noisy Networks for Exploration
Playing Atari with Deep Reinforcement Learning
Prioritized Experience Replay
Proximal Policy Optimization Algorithms
Quantum Reinforcement Learning
Rainbow: Combining Improvements in Deep Reinforcement Learning
Recurrent Experience Replay In Distributed Reinforcement Learning
Reinforcement Learning Using Quantum Boltzmann Machines
Reinforcement Learning with Long Short-Term Memory (LSTM)
Resilient Computing with Reinforcement Learning on a Dynamical System: Case Study in Sorting
RUDDER: Return Decomposition for Delayed Rewards
Sample Efficient Actor-critic with Experience Replay
Sample-Efficient Reinforcement Learning with Stochastic Ensemble Value Expansion
Simple statistical gradient-following algorithms for connectionist reinforcement learning
Some Papers Don't Reproduce. Should We Care?
State of the Art Control of Atari Games Using Shallow Reinforcement Learning
The Effects of Memory Replay in Reinforcement Learning
Thesis: Insights in Reinforcement Learning: Formal analysis and empirical evaluation of temporal-difference learning algorithm
Tight Performance Bounds on Greedy Policies Based on Imperfect Value Functions
Transparency and Explanation in Deep Reinforcement Learning Neural Networks
Troubling Trends in Machine Learning Scholarship
Tuning Recurrent Neural Networks With Reinforcement Learning
Unity: A General Platform for Intelligent Agents
Variational Discriminator Bottleneck

## Patents

Dueling Deep Neural Networks
Training Neural Networks Using a Prioritized Experience Memory

## Slides

(10) Principles of Deep RL
(Advances in) Quantum Reinforcement Learning
Algorithmic Machine Learning

## Tools

PyTorch
Roboschool
ROS
Unity
`

## Videos

Reinforcement learning course - David Silver
Deep Reinforcement learning course - Sergey Levine (UC Berkeley, CS294-112)
Two Minute papers
Deep RL Bootcamp 2017 - Pieter Abbeel
Deep RL Bootcamp Lecture 6: Nuts and Bolts of Deep RL Experimentation
Policy Gradient methods and Proximal Policy Optimization (PPO): diving into Deep RL!
Writingat Reward Functions - Bonsai Gre
Deep Reinforcement Learning in the Enterprise: Bridging the Gap from Games to Industry
Advanced Deep Learning and Reinforcement Learning course at UCL by DeepMind
**How to cite in Slack (back ticks prevent preview):**

| `http://bit.ly/drlndlinks` | Please Insert > Row and add new links freely |
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| https://www.udacity.com/course/deep-reinforcement-learning-nanodegree--nd893 | |
| https://github.com/LantaoYu/MARL-Papers | |
| https://arxiv.org/abs/1807.09427v1 | |
| https://arxiv.org/pdf/1809.04474.pdf | https://deepmind.com/blog/preserving-outputs-precisely- |
| http://ml.informatik.uni-freiburg.de/former/_media/publications/rieecml05.pdf | |
| https://arxiv.org/pdf/1706.10295.pdf | |
| https://arxiv.org/pdf/1312.5602.pdf | DeepMind Technologies (2013) |
| https://arxiv.org/pdf/1511.05952.pdf | |
| https://arxiv.org/pdf/1707.06347.pdf | |
| https://arxiv.org/pdf/0810.3828.pdf | See `http://bit.ly/drlndtalk` on August 13 |
| https://arxiv.org/pdf/1710.02298.pdf | Mentioned in Yann LeCun's IJCAI '18 keynote: |
| https://openreview.net/pdf?id=r1lyTjAqYX | |
| https://1qbit.com/wp-content/uploads/2016/12/1QBit-Research-Paper-%E2%80%93-Quantum-Reinforcement-Learning-%E2% | See `http://bit.ly/drlndtalk` on August 13 |
| https://papers.nips.cc/paper/1953-reinforcement-learning-with-long-short-term-memory.pdf | |
| https://arxiv.org/abs/1809.09261 | Implement sorting with RL |
| https://arxiv.org/pdf/1806.07857.pdf | |
| https://arxiv.org/pdf/1611.01224.pdf | |
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| http://www-anw.cs.umass.edu/~barto/courses/cs687/williams92simple.pdf | REINFORCE |
| https://www.dropbox.com/s/wwryzck6giue1j1/Irpan%20-%20The%20Cost%20of%20Reproducibility.pdf?dl=0 | Suggestion:  shift the trade-off curve entirely, such that t |
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| http://qtml2017.di.univr.it/resources/Slides/Progress-in-Quantum-Reinforcement-Learning.pdf | |
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| https://pytorch.org/ | https://pytorch.org/tutorials/ |
| https://blog.openai.com/roboschool/ | Alternative to MuJoCo (Not well maintained) |
| http://www.ros.org/ | |
| https://unity3d.com/machine-learning/ | https://github.com/Unity-Technologies/ml-agents/blob/m |
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| https://www.youtube.com/playlist?list=PL7-jPKtc4r78-wCZcQn5IqyuWhBZ8fOxT | 10 videos 131,681 views Last updated on Feb 23, 2016 |
| https://www.youtube.com/playlist?list=PLkFD6_40KJIznC9CDbVTjAF2oyt8_VAe3 | 24 Lectures, Fall 2017 Session |
| https://www.youtube.com/channel/UCbfYPyITQ-7l4upoX8nvctg | |
| https://sites.google.com/view/deep-rl-bootcamp/lectures | 15 videos + slides |
| https://www.youtube.com/watch?v=8EcdaCk9KaQ&t=0s&index=8 | |
| https://youtu.be/5P7I-xPq8u8 | |
| https://youtu.be/0R3PnJEisqk | |
| https://youtu.be/GOsUHlr4DKE | |
| https://www.youtube.com/playlist?list=PLqYmG7hTraZDNJre23vqCGIVpfZ_K2RZs | |
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he same amount of researcher time naturally produces more robust and reproducible results.

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