

Games

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Placeholder

- This is a placeholder for a lecture that will be added at a later date

To Do

- Start this with an outline of common games
 - Are all of these at their core really a classification problem?
 - Grey out the ones that we won't cover
- <https://www.ics.uci.edu/~dechter/courses/ics-295/winter-2018/papers/mcts-gelly-silver.pdf>

Tutorials

- Stanford CS234 reinforcement learning
 - <http://web.stanford.edu/class/cs234/index.html>
 - <http://web.stanford.edu/class/cs234/schedule.html>
- Mastering the game of go from scratch
 - https://web.stanford.edu/class/cs234/past_projects/2017/2017_Painter_Johnston_Mastering_Go_Paper.pdf
- CS229 project final report deep q-learning on arcade game assault
 - <http://cs229.stanford.edu/proj2016/report/MeiYouChan-DeepQLearningOnArcadeGameAssault.pdf>
- Playing go without game tree search using convolutional neural networks
 - <http://cs231n.stanford.edu/reports/2017/pdfs/603.pdf>
- Lecture 14: reinforcement learning
 - http://cs231n.stanford.edu/slides/2017/cs231n_2017_lecture14.pdf

To Do

- Question
 - Why is playing a game more complex than vision or speech?
 - Still a classification problem of figuring out the best action or move at a specific time
 - But have to solve the problem for a combinatorial explosion of possible futures
- Horizon: Facebook's open source applied reinforcement learning platform
 - <https://arxiv.org/abs/1811.00260>
- Horizon
 - <https://github.com/facebookresearch/Horizon>

DotA2

- OpenAI Five
 - <https://blog.openai.com/openai-five/>
- Emergent complexity via multi-agent competition
 - <https://arxiv.org/abs/1710.03748>
- The Dota 2 Bot Competition
 - <https://ieeexplore.ieee.org/abstract/document/8356682>
- Calculating Optimal Jungling Routes in DOTA2 Using Neural Networks and Genetic Algorithms
 - <https://computing.derby.ac.uk/ojs/index.php/gb/article/view/14>
- Skill-based differences in spatio-temporal team behaviour in defence of the Ancients 2 (DotA 2)
 - <https://ieeexplore.ieee.org/abstract/document/7048109>

Motivation

Add

- Progress in xNNs is directly linked to progress in improved implementations

References

List

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