WEEKLY RESEARCH PROGRESS REPORT: 35 (UP UNTIL FEBRUARY 16)

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1 QUOTE OF LAST WEEK'S PLAN

- Read (Pan et al., 2019) and (Pan et al., 2019).
- Complete beamer presentation on *Toward Information Theory blessed Deep Reinforcement Learning*.
- ICML 2019 workshop on self-supervised learning.
- Read new paper from Huawei (Zhu et al., 2019) on casual inference.

2 PLANNED ACCOMPLISHMENTS

Finished

- Read (Pan et al., 2019) and (Pan et al., 2019).
  Definitely two great papers. The first one gives me a brand new and mind-blowing impact on how the actor-critic really work in RL and how we treat exploration problem properly and the second one brings up lots of new questions for me to survey like why **Boltzmann Softmax** is a great action-value summary operater.
- Read new paper from Huawei (Zhu et al., 2019) on casual inference.
  This work reminds me of the very first paper of DRL (Mnih et al., 2013): they both introduce RL method into a tradiational field i.e. causal inference. And it also urges me to learn **Causal Inference** related knowledge since I have seen the name in many places in the past several weeks.

Unfinished

- Complete beamer presentation on *Toward Information Theory blessed Deep Reinforcement Learning*.
  why: After reading (Pan et al., 2019) and (Pan et al., 2019), I relieased that my understanding of exploration-exploitation is quite shallow before. And I decided to use some more time to take a deeper look and plan to polish the slides next week.
- ICML 2019 workshop on self-supervised learning.
  why: Last week (2.9 - 2.16), I mainly focused on the AAAI conference which causes me forgetting this, my bad.

3 OTHER ACCOMPLISHMENTS

- NIPS 2019 Tutorial, Yoshua Bengio: From System 1 Deep Learning to System 2 Deep Learning
- AAAI 2020 Keynote Speech, Yann LeCun: Deep Self-Supervised Learning
- AAAI 2020 Tutorial, Recent Advances in Machine Teaching: From Machine to Human
- DeepMind Blog: A new model and dataset for long-range memory
- ResNet and Residual Learning: (He et al., 2016a) and (He et al., 2016b)
- Papers (Fujimoto et al., 2018) and (Ma et al., 2019)

4 Issues and Problem to solve

- Boltzmann operater in exploration
- Difference between population-based method and multi-agent framework

5 Next Week's Plan

- Complete beamer presentation on *Toward Information Theory blessed Deep Reinforcement Learning*.
- ICML 2019 workshop on self-supervised learning.
- Graph Machine Learning survey (Wu et al., 2019).
- Inverse RL survey (Arora & Doshi, 2018).
- Causal Inference survey (Yao et al., 2020).
- Machine Teaching survey (Zhu et al., 2018).

References

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