Deep Q-Learning for NLP

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1 Brain Dump

Input Data: Streaming Queries from the time of query until an hour before the time of query.

Step 1: ?

Step 2: ?

Output: Summarization of relevant Queries.

Last hidden layer of an LSTM-RNN will be a k-dimensional embedding of a given sentence.

Use Deep Q Learning framework based on [3] and [2].

2 Useful Links

Just adding some links to useful things

`http://trec.nist.gov/`

`http://icml.cc/2016/tutorials/deep_rl_tutorial.pdf`

3 To-Do's

Task	Status	Person
Read DQN Paper [3]	Complete	Francisco
Read Asynchronous RL Paper [2]	Incomplete	Francisco
Read Regularization Paper [1]	Incomplete	Francisco
Install Torch	Complete	Francisco
Small simulation of MLP in Torch	Incomplete	Francisco
Small simulation of DQN in Torch	Incomplete	Francisco
Download data	Incomplete	Francisco
Explore data	Incomplete	Francisco

References

[1] Minmin Chen, Zhixiang Xu, Kilian Weinberger, and Fei Sha. Marginalized denoising autoencoders for domain adaptation. *arXiv preprint arXiv:1206.4683*, 2012.

[2] Volodymyr Mnih, Adrià Puigdomènech Badia, Mehdi Mirza, Alex Graves, Timothy P. Lillicrap, Tim Harley, David Silver, and Koray Kavukcuoglu. Asynchronous methods for deep reinforcement learning. *CoRR*, abs/1602.01783, 2016.

[3] Volodymyr Mnih, Koray Kavukcuoglu, David Silver, Alex Graves, Ioannis Antonoglou, Daan Wierstra, and Martin A. Riedmiller. Playing atari with deep reinforcement learning. *CoRR*, abs/1312.5602, 2013.