Short Summary

Sunday, March 1, 2020 5:38 PM

What are problems with the previous RL learning or predictive model learning?

The previous approaches are all focused on leveraging the learning from the inter
dataset with the known actions). However, just having interaction dataset is not s
agent to deal with complex environment because interaction dataset is mostly fo
and most of the suitable interaction dataset is generated from the same kind of a

Therefore, it throws a question, can we use dataset from humans (could be videc
similar work) to leverage from the observation data? But, we would also suffer fr
related to domain shift due to the different actions can be performed by human a
embodiments.

How to deal with leveraging the learning from interaction data and observation data, a

(Note this paper focuses on predict the next frame of the video)

This paper introduces a latent variable (z) that to model the action based on the s
(observation data) and the sequences of state-action pair (interaction data). It th
variational distributions to approximate the latent variable(z) using the observati
data separately whereas variational parameters are learnt by optimizing the evid
(ELBO). Then we can use the latent variable to predict the action, and then we ca
action to predict next frame.

To handle the domain shift, we can divide the latent variable z into z^{shared} and z
technique to allow the network to learn the difference.