Reading Comments

ראש הטופס

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**What is the problem the paper is solving?**

1. Complexity: It uses the fact that once decoupled, each individual task can be computed quickly, thus reducing the overall complexity of Dec-mdps'.
2. It shows empirical evidence that people do act according to the actual benefit of interruption, with slight deviation, and sheds light on how people make interruption decision.

**Why is the problem interesting or difficult?**

1. Dec-Mdps are nexp-complete so any improvement in this field is needed.
2. Understanding how people react to interruption will help create better help/Recommendation systems for human computer interactions.   
   (And there are plenty).

**How is the paper solving the problem?**

It limits the scope of interruption to 1 and thus allows separate the problem to a single agent MDP and NOMDP.

**What are the main contributions of the paper?**

There has been little empirical work on how people perceive interruption utilities and make interruption decisions in human-computer interaction settings.

There has been even less work on the benefit of interruptions to collaborative activities and the users state of mind in rapidly changing domains of uncertainty

This article has it all.

**What are the strongest and weakest points of the paper?**

Strongest: - The empirical study, empirical evidence is critical to scientific studies.  
 - Complexity improvements.

Weakest: - Only 1 interruption is possible.

**Explain Equation 1 in your own words. Make sure to relate to all terms and summations.**

It is the standard equation for value iteration in mdps.

Equation 1 denotes to the value of taking the optimal policy for the principle player at State S(h,p) where h states the round and p means principle.

R is the reward function that is positive for an action leads a player to its goal state and 0 otherwise; this is summed with the sum of the optimal played values of the possible following states at round h+1 with action m from said state times the transition probability to those states.

All of this is run over all possible actions m to find the one that leads to the maximum value, thus the optimal policy.

**Explain Equation 5 in your own words. Make sure to relate to all terms and summations.**

Equation 5 is the expected value of utility when the principle accepts and interruption for an optimal policy by the principle for the following states.  
  
By accepting an interruption it cannot move for 1 turn and therefor moves to a state where the principal is located at the same position denoted by p, h is increased by 1 and the goal is now stochastically positioned on the board by distribution p denoted by g^h+1.  
  
Since there can be many possible following states the weighted average of the optimal policy value of a state times the probability of reaching that state is the expected optimal utility.

We will notice that R is not present in this equation because of the interruption and that there is no max function since the action is interruption.

**How would you change/modify/extend the approach?**

I would expand this method to cases with more interruptions or check if this is even possible.

תחתית הטופס