



Contribution ID: 1

Type: not specified

Beta- Version of Application for Preference Tailoring

Thursday, 29 June 2023 09:15 (20 minutes)

This presentation focuses on the specification of user's preferences in decision-making, particularly in cases where users have limited knowledge of decision-making (DM) theory and express their preferences incompletely.

The decision-making task is solved by a fully probabilistic design (FPD), which models a closed loop between the user and the system. The FPD introduces an ideal probability density, which has high probability values of preferred behavior and low probability values of inappropriate behavior. By minimizing the Kullback-Leibler divergence of the real pd and the ideal pd an optimal decision policy is found.

We also work with contradictory preferences between states and actions. This brings even more burden on the specification of preferences, since it is impossible even for the user who understands the theory of DM to quantify the relation of these two preferences before knowing the dynamic of the system. To overcome the limitation of incompletely specified preferences, another closed-loop was added. The user observes the sequences of states and actions and then they rate how they like it using marks as at school. Based on the feedback the parameters of the main closed-loop are tuned.

We want to make a survey of how different users rate similar observation and also find out if they are satisfied with our results.

We decided to create an application to collect data so that we can draw conclusions about whether our theory would be helpful. We will introduce the first version of our application, which was developed in Python. This presentation serves to explain how the application works, what the users should rate and how. In the end of the presentation we send the app to the audience and we will ask them to participate in our survey.

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Session Classification: Dynamic Decision Making