MODELING HUMAN DECISION-MAKING UNDER RISK BASED ON REGRET-THEORY AND FUZZY LOGIC

SPEAKER: LONGSHENG JIANG

Because of sensory limitation, the observation results, reported by robots in a human-robot collaborative team, are under risk (not guaranteed to be correct). The robots now need to decide whether to request the re-observation by the supervisor. As the robots act as the extension of the supervisor, it is desirable that the decision-making criterion of the robots are identical to that of the individual. This work measures such a computational decision-making model. Because humans are the subjects, an interdisciplinary approach is taken. The computational model is based on regret theory initially proposed by economists. To account for the natural language communication, fuzzy sets are used as the vehicle to convey information. The data from subjects are collected by psychological survey instruments. These components are integrated into a feedback close-loop by fuzzy logic control. The goal is to compute an analytical regret model, which captures risk-seeking/aversion tendency of an individual, and a customized communication fuzzier. These two modules together construct the person's decision-making model.

MONDAY, OCTOBER 23 AT 3:00 PM

EIB 132