Tutoriel : Principled Approaches to Preference Learning

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Résumé

Many applications, such as decision support systems and recommender systems, need to reason about the user's preferences. However, acquiring the preferences of the user is a challenging task for a number of reasons. First, elicitation of user preferences is usually expensive (w.r.t. time, cognitive effort, etc.). Second, many decision problems have large outcome or decision spaces. Third, users are inherently "noisy" and inconsistent. Since classical elicitation paradigm from decision theory are impractical for modern software applications, a number of approaches for effectively eliciting preferences have been recently proposed in the artificial intelligence and machine learning community. This tutorial will review the most prominent techniques, including learning from ranked data. We wil however put a particular emphasis on interactive methods that aim at asking the most informative questions in order to make good (or even optimal) recommendations with sparse knowledge of the user's utility function.

Mots-Clés: preference learning, preference elicitation, optimization, decision theory, artificial intelligence

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