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Interactive multi-label classification for data personalization

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Abstract. Recent interactive machine learning solutions have shown that embedding the end-user into the system might be the best way to fit his/her individual preferences. We here focus on a user-centered classification process which allows the user to interact with pre-computing results via a friendly visual interface. Recent experiments showed that interactive classification yields accurate results when classifiers are associated with a sufficient number of user-presented examples (Drucker et al., 2011). However, the efficient interactive learning solutions generally limit users to mono-labeling which may be not expressive enough in real-life situations; for instance, in some organization tasks, such as text labeling or multi-criteria recommendation where the user will naturally seek to handle multiple labels. In parallel, multi-label classification has received significant attention over the past few years (Madjarov et al., 2012). But, as far as we know, integrating multi-label approaches into an interactive learning framework still set open questions. In this communication, we propose a state-of-the-art of the multi-label classification algorithms capable of withstanding the interactivity constraints. We complete the presentation with first experimental results on literature datasets of various sizes (e.g. *Music* and *IMDB*).

Keywords

Interactive learning, multi-label classification, interactivity constraints

References

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