



One-and-only item recommendation with fuzzy logic techniques

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Abstract

Recommender systems anticipate users' needs by suggesting items that are likely to interest them. Most existing systems employ collaborative filtering (CF) techniques, searching for regularities in the way users have rated items. While in general a successful approach, CF cannot cope well with so-called one-and-only items, that is: items of which there is only one single instance (like an event), and which as such cannot be repetitively "sold". Typically such items are evaluated only after they have ceased being available, thereby thwarting the classical CF strategy. In this paper, we develop a conceptual framework for recommending one-and-only items. It uses fuzzy logic, which allows to reflect the graded/uncertain information in the domain, and to extend the CF paradigm, overcoming limitations of existing techniques. A possible application in the context of trade exhibition recommendation for e-government is discussed to illustrate the proposed conceptual framework.

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1. Introduction

With the advent of large-scale online applications, personalization has gained momentum as a means of challenging the information overload, as well as of understanding, and catering to, the needs of individuals or groups of customers. As a concrete example, personalization of e-government services is aimed at custom-tailoring the content government provides to the individual and business user. In many countries, e-government applications are growing rapidly and the amount of e-government websites, as well as the resources and services provided, are dynamically increasing. As a consequence, citizens may find it more and more difficult to locate relevant information from these websites. Matching particular citizens' and businesses' interests and needs is therefore one of the main challenges for e-government services, and intelligent decision support

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