Karlsruher Institut für Technologie

Institut für Angewandte Informatik und Formale Beschreibungsverfahren

Graduiertenkolloquium Angewandte Informatik

Cross-domain Recommendations based on semantically-enhanced User Web Behavior

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Abstract:
The enormous quantity of information in the Web vastly outstrips humans' capability to survey it, making it increasingly difficult for users to find the relevant information they seek. An alternative approach to information seeking, besides search engines where an explicit query has to be formulated, is to surf the Web by following appropriate links and interacting with the available Web pages. This is often challenging since people are not always able to determine the links that are most likely to lead to the required information or most relevant Web resources. The task becomes more difficult when we consider that users' interests span over various domains and independent Web sites.

Information seeking can be facilitated by recommender systems that guide the users in a personalized manner to relevant resources in the large space of the possible options in the Web.

In this talk, we present techniques for building cross-domain recommender systems in an open Web setting. We introduce a formal model of user browsing behavior, which is able to capture contextualized knowledge of Web resources through a set of semantic enrichment techniques. The developed artifacts provide a broader context of user behavior, which can be used to leverage intelligent Web recommendation methods. In this scope, two approaches are presented for learning user preferential behavior, and accordingly generate cross-domain recommendations.

The first approach comprises a recommendation technique that exploits in novel ways the semantic structures of Web resources in combination with behavior patterns to enable accurate user preference predictions. The contribution also comprises a diversification mechanism to ensure diversity of recommendations from various domains.
The second approach addresses the task of inferring user preference relationships to items in a sparse domain by transferring auxiliary knowledge from another domain. The novelty of this work lies in an expressive multi-relational probabilistic model, which is used to facilitate knowledge transfer in a cross-domain collaborative filtering system.
The efficacy of the presented techniques is verified through extensive experiments with real-world datasets.

Termin: Freitag, 24. Januar 2014, 14.00 Uhr

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Veranstalter: Institut AIFB, Forschungsgruppe Wissensmanagement

Zu diesem Vortrag lädt das Institut für Angewandte Informatik und Formale Beschreibungsverfahren alle Interessierten herzlich ein.

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