

Relevance and Ranking in Online Dating Systems

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Abstract:

Match-making systems refer to systems where users want to meet other individuals to satisfy some underlying need. Examples of match-making systems include dating services, resume/job bulletin boards, community based question answering, and consumer-to-consumer marketplaces. One fundamental component of a match-making system is the retrieval and ranking of candidate matches for a given user. We present the first in-depth study of information retrieval approaches applied to match-making systems. Specifically, we focus on retrieval for a dating service. This domain offers several unique problems not found in traditional information retrieval tasks. These include two-sided relevance, very subjective relevance, extremely few relevant matches, and structured queries. We propose a machine learned ranking function that makes use of features extracted from the uniquely rich user profiles that consist of both structured and unstructured attributes. An extensive evaluation carried out using data gathered from a real online dating service shows the benefits of our proposed methodology with respect to traditional match-making baseline systems. Our analysis also provides deep insights into the aspects of match-making that are particularly important for producing highly relevant matches.