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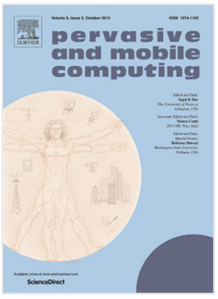

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Automatic Rule Generation using Crowdsourcing for Better Relationship Type Discovery

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Abstract

With the increasing popularity of information sharing and the growing number of social network users, relationship management is one of the key challenges which arise in the context of social networks. One particular relationship management task aims at identifying relationship types that are relevant between social network users and their contacts. Manually identifying relationship types is one possible solution, however it is a time-consuming and tedious task that requires constant maintenance. In this paper, we present a rule-based approach that sets the focus on published photos as a valuable source to identify relationship types. Our approach automatically generates relevant relationship discovery rules based on a crowdsourcing methodology that constructs useful photo datasets. Knowledge is first retrieved from these datasets and then used to create relationship discovery rules. The obtained set of rules is extended using a number of predefined common sense rules and then personalized using a rule mining algorithm. Experimental results demonstrate the correctness and the efficiency of the generated sets of rules to identify relationship types.

Keywords: Relationship discovery, Crowdsourcing, Knowledge Acquisition, Rule Extraction, Link mining, Social networks

1. Introduction

With a rapidly growing number of social network users and the rise of privacy concerns [1] [2], relationship management has turned out to be of fundamental importance. Relationship management, which is a major social networking challenge, refers to maintaining accurate and updated information about a user's contacts. One particular relationship management task seeks to identify relationship types that are relevant between social network users and their contacts.

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