Abstract

This paper proposes an architecture and assignment management model of a conference management system that performs a precise and accurate automatic assignment of reviewers.
to papers. The system relies on taxonomy of keywords to describe papers and reviewers’
competences. The implied hierarchical structure of the taxonomy provides important additional
information – the semantic relationships between the separate keywords. It allows similarity
measures to take into account not only the number of exactly matching keywords between a
paper and a reviewer, but in case of non-matching ones to calculate how semantically close
they are. Reviewers are allowed to bid on the papers they would like to (or not like to) review
and to explicitly state conflicts of interest (CoI) with papers. An automatic CoI detection is
checking for additional conflicts based on institutional affiliation, co-authorship (within the local
database) and previous co-authorship in the past (within the major bibliographic indexes and
digital libraries). The algorithm for automatic assignment takes into account all – selected
keywords, reviewers’ bids and conflicts of interest and tries to find the most accurate
assignment while maintaining load balancing among reviewers.

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**Index Terms**

Computer Science  
Knowledge Management

**Key words**

Conference management systems  
Assignment of reviewers to papers  
Software architecture
Web applications

Conflicts of interest detection

Bidding on papers