

# Scheduling Support System for Academic Conferences Based on Interpersonal Networks

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## ABSTRACT

In this paper, we discuss importance and utilization of interpersonal network in a community system through the result of management and analysis of the scheduling support system for academic conferences. The important feature of the system is generation and utilization of interpersonal network to support information exchanging and information discovery among participants. We applied this system to the academic conference called JSAI2003. We obtained 276 users and their interpersonal networks. We found not only that a lot of participants enjoyed to form interpersonal networks but also that the formed network was useful for them in information browsing and recommendation.

## Categories and Subject Descriptors

H.4 [Information Systems Applications]: Miscellaneous

## General Terms

Design

## Keywords

online community, information sharing, recommendation

## 1. INTRODUCTION

In this paper, we discuss importance and utilization of personal network in a community system through the result of management and analysis of the scheduling support system for an academic conference. The system is designed to support not only personal activities in conferences such as scheduling but also communication among participants.

To activate discussion in academic conferences and promote

communication among participants, it is important for participants to find interesting presentations and to know what kinds of people participate and which participants share similar concerns. However, it is hard for a user to learn such information from a large amount of information on presentation and participants.

This system adopted a "person as content" strategy. It means that persons are information sources; it treats persons as information nodes that are accessible to other users. These nodes are connected through interpersonal network based on their own relationships.

Interpersonal network can show what kinds of people participate. Furthermore, new routes are created for discovery of papers and other persons because persons are connected with papers or other persons with links. Based on the developed network this system also offers services for recommending papers and participants that are considered to be interesting for individual users.

## 2. SYSTEM OUTLINE

The system dynamically generates the following four types of HTML pages: author, paper, session, and personal timetable. Each HTML page is linked mutually based on the relationship stored in the databases; a user can browse the generated HTML pages freely and even add a new relationship. The personal timetable is changed based on the relationships added by users.

This system roughly addresses two types of data: resources and links. Resources include three categories: session, presented paper, and person (author, chairperson, and other user). A link shows the relevance from one resource to another. There are five categories on links: Contain (session-paper), Author (author-paper), Chair (chairperson-session), Check (user-paper), and Know (user-people). Contents, Chairs, and Authors are registered in advance, while Check and Know can be added by users.

## 3. OFFERED SERVICES

Creation of a personal timetable and the acquaintance lists ("I-know" and "I-known-by" lists) are basic functions. When a user can find an interesting paper in the conference schedule or the paper list, she/he can add it to her/his schedule. Then, her/his timetable is updated. Similarly, when a user finds an acquaintance on paper or session pages, she/he can add the acquaintance to her/his "I-know" list. At the same time, the user is added to the acquaintance's "I-known-by" list. These actions mean additions of a Check link and a Know link, respectively.

Figure 1 is an example of personal page provided for each user. In the page, there are personal information, her/his presentations and hyperlinks to some services. Below them "I-know" and "I-known-by" lists.

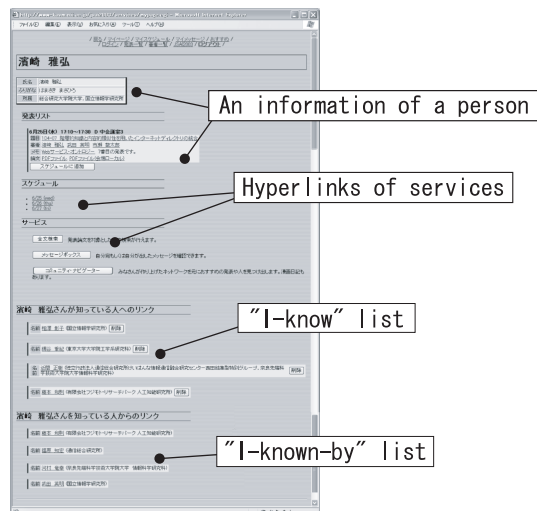


Figure 1: My Page

Added links are a kind of private information; it is not suitable to the public unconditionally. This system conducts access control using the generated network. The detail information of a person can be accessible for persons who are registered as her/his acquaintance. The similar control is applied for detail information on who "checked" the specific paper.

We provide information recommendation service using the links added by users. This service recommends both papers and persons. A user can find interesting papers and persons not only by browsing but also by recommendation.

## 4. RESULTS

We applied this system to the academic conference JSAI2003 and JSAI2004. The following analysis is based on JSAI2003. In this conference there are 30 sessions, 259 presentations and 510 authors (including co-authors). About 400 participants joined that conference between Jun 23 and 27, 2003.

The system was used by 276 users. 160 users added 1840 Check-Links and 99 users of them added 840 Know-Links. Figure 2 shows co-author networks and know-link networks. In these networks a node is a person and an edge is a relationship among persons (co-author or know-link). The two

networks shared 135 edges.

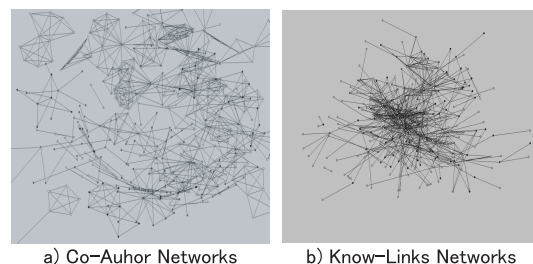


Figure 2: Co-Author Networks and Know-Link Networks

The co-author networks have 73 clusters, while the network merged with the know-link network has only clusters. It indicates that edges made by know-links connect scattered co-author networks.

Figure 3 shows log-log plot of the cumulative distributions of incoming know-links. It shows a tendency of "broad scale"[1].

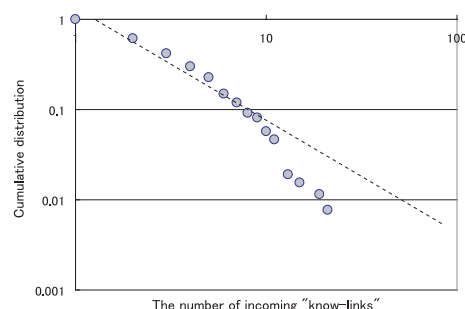


Figure 3: The Distributions of Incoming Know-Links

The system provided two types of recommendation services. One used check-links and the other used know-links. 135 persons used this service. Table 1 shows behaviors of users when they received recommended items. The results show that the recommendation using know-links is comparatively useful with recommendation using check-links which is a kind of collaborative filtering.

Table 1: Results of Recommendation

	Access to Items	Add a Link
Using Check-Links	347	72
Using Know-Links	210	23

## 5. CONCLUSIONS

This paper reported the conference support system based on interpersonal network. This system has offered important new services that support person-to-person and person-to-content encounters before, during, and after an academic conference.

## 6. REFERENCES

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