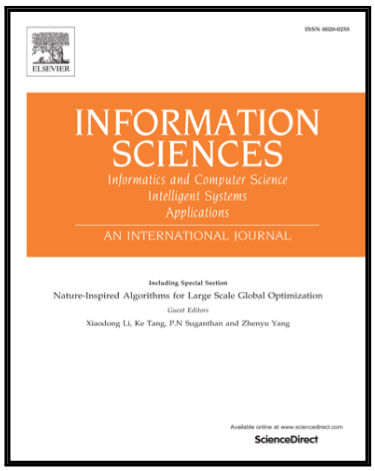


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# Overlapping community detection in heterogeneous social networks via the user model

Mingqing Huang[a], Guobing Zou[a,*], Bofeng Zhang[a,*], Yue Liu[a], Yajun Gu[a], Keyuan Jiang[b]

[a]*School of Computer Engineering and Science, Shanghai University, Shanghai 200444, China*

[b]*Department of Computer Information Technology and Graphics, Purdue University Northwest, Indiana 46323, USA*

**Abstract**

Clustering users with more common interests who interact frequently on social networking sites has attracted much attention from researchers due to the high economic value and further application prospects. Community detection is a widely accepted means of dealing with the challenge of clustering users, but conventional methods are inadequate since there are billions of vertices and various relations in social media. Through the user model, a heterogeneous network containing both undirected and directed edges is built in this study to exactly simulate a social network. A novel approach for overlapping community detection in a heterogeneous social network (OCD-HSN) is proposed, which contains seed selecting and community initializing and expanding to accurately and efficiently unfold modules in parallel. Experimental results on artificial and real-world social networks demonstrate the higher accuracy and lower time consumption of the proposed scheme compared with other existing state-of-the-art algorithms.

*Keywords:* Community detection, Heterogeneous network, User modeling, Community seed, Community expansion

*Corresponding authors.

*Email addresses:* mqhuang@shu.edu.cn (Mingqing Huang), gbzou@shu.edu.cn (Guobing Zou ), bfzhang@shu.edu.cn (Bofeng Zhang ), yliu@staff.shu.edu.cn (Yue Liu), yjgu@shu.edu.cn (Yajun Gu), kjiang@pnw.edu (Keyuan Jiang)