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# A fast algorithm for overlapping community detection

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**Abstract**

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**Abstract:**

Nowadays, the emergence of online social networks have empowered people to easily share information of social networks with similar users and their friends form community structures of networks. Uncovering networks plays an important role in network analysis with many applications such as finding a set of expected common activities, finding a set of similar people for marketing goals, to mention a few. Although, several detection have been presented in the literature, online users simultaneously interact with their friends have to join more than one group at the same time which leads to the formation of overlapping communities. To realize a realistic analysis of networks. In this paper, we propose a fast algorithm for overlapping community detection. In the first phase, the Louvain method is applied to the given network and in the second phase a belongingness matrix determines how much a node belongs to a community. Finally, some of the found communities are evaluated by the modularity measure. The performance of the proposed algorithm is studied through the simulation on the proposed algorithm outperforms several well-known overlapping community detection algorithms.

**Published in:** Information and Knowledge Technology (IKT), 2016 Eighth International Conference on

**Date of Conference:** 7-8 Sept. 2016

**DOI:** 10.1109/IKT.2016.7777771

**Date Added to IEEE Xplore:** 12 December 2016

**Publisher:** IEEE

**ISBN Information:**[Download PDF](#)[Download Citations](#)[View References](#)[Email](#)[Print](#)[Request Permissions](#)[Export to Collabratec](#)[Alerts](#)

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**Keywords****IEEE Keywords**

Algorithm design and analysis, Social network services, Detection algorithms, C Image edge detection, Clustering algorithms, Feature extraction

**Author Keywords**

fast algorithm, Community detection, overlapping communities, social network a matrix, larg networks

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