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Deployment of social nets in multilayer model to identify key individuals using majority voting
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Abstract
Social web and social media are evidenced to be a rich source of user-generated social content. Social media includes multiple numbers of social dimensions represented by different social networks. The identification of important player in these real-world social networks has been in high emphasis due to its effectiveness in multiple disciplines, especially in law enforcement areas working on dark networks. Many algorithms have been proposed to identify key players according to the objective of interest using suitable network centrality measures. This paper proposes a new perspective of dealing with key player identification by redefining it as a problem of "Key Individual Identification," across multiple social dimensions. Research deals with each social dimension as a layer in the multiple-layer social network model. The proposed technique extracts a number of features from each network based on social network analysis. The features are assembled to formulate a global feature set representing the behaviors of individuals in all networks individually. The technique then attempts to find key individuals using hybrid classifiers. The results from all classifiers are formulated, and the final decision of an individual to be part of the individual key set is based on majority voting. This novel technique gives good results on a number of known networks. © 2018, Springer-Verlag London Ltd., part of Springer Nature.

Author Keywords
Ego network analysis; Ensemble classification; Key player identification; Majority voting; Multilayer network; Social network analysis

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