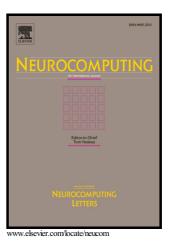
## Author's Accepted Manuscript

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#### Identifying Social Influence in Complex Networks: A Novel Conductance Eigenvector Centrality Model

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### Identifying Social Influence in Complex Networks: A Novel Conductance Eigenvector Centrality Model

**Abstract:** Identifying influential peers is an important issue for business to promote commercial strategies in social networks. This paper proposes a conductance eigenvector centrality (CEC) model to measure peer influence in the complex social network. The CEC model considers the social network as a conductance network and constructs methods to calculate the conductance matrix of the network. By a novel random walk mechanism, the CEC model obtains stable CEC values which measure the peer influence in the network. The experiments show that the CEC model can achieve robust performance in identifying peer influence. It outperforms the benchmark algorithms and obtains excellent outcomes when the network has high clustering coefficient. **Keywords:** Influence identification; conductance network; conductance eigenvector centrality; random walk

#### **1** Introduction

With the explosive growth in the variety and size of social networks, social networks have evolved into one of the well-liked channel for business on the Internet. According to the social media statistics, 16 million small businesses are active on Facebook in 2013. About 86 percent of Download English Version:

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