

## Semantic Detection of Influence on Dynamic Social Networks

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### *Abstract*

Influence Maximization (IM) is the phenomenon by which online influencers are made to promote opinions, products, or services through their usually huge online following. A typical Influence Maximization algorithm has, as inputs, a set of influencers, a means of propagating information across the social network and a budget. The algorithm determines the total number of online users that can be influenced into adopting the opinion, product or service recommended by the influencer.

However, most Influence Maximization algorithms work by using the number of influencers as one of the inputs. This approach is based on a wrong assumption that influencers remain the same in the social network space. The reality is that influencers change with time, season, or content. Additionally, most IM algorithms are designed to work with static networks. This assumes that network topology remains the same.

In this work, we propose a novel algorithm that identifies influencers as an output of an IM algorithm rather than an input. This brings the advantage of having to select influencers at a time instance with an array of currently identified influencers available for selection. This can ensure a more optimal word of mouth marketing via the online social space. The work also intends to run an IM algorithm on a dynamic network as opposed to static network.

### *Keywords*

Influence Maximization, Social Network, Influencers, dynamic network, static network.