

New approach to online compatibility

June 30 2015, by David Bradley

Many of the online social networks match users with each other based on common keywords and assumed shared interests based on their activity. A new approach that could help users find new friends and contacts with a greater likelihood of their becoming positive connections is reported this month in the International Journal of Social Network Mining.

Arefeh Kazemi, Mohammad Ali Nematbakhsh and Mohammad Mehdi Keikha of the Computer Engineering Department at the University of Isfahan in Iran, explain how one of the most useful features of many [online social networks](#) is the ability to find other members with whom one might be compatible. "Suggested [friends](#) and contacts" algorithms that help with this process might help one make new friends, business contacts or sales leads, for instance, depending on the particular social network involved. Current algorithms work in a similar way to those by dating agencies in that they look for exact matches and those people who have overlapping interests. Moreover, they tend to look for putative connections among friends of friends and so are limited in terms of finding novel connections between people who would otherwise have no way of discovering each other.

The Isfahan team suggest that the exact match approach is less likely to find unlikely but truly compatible pairs. As such, they have devised a three-pronged approach on social network users based on what they refer to as semantic similarity, conceptual complement, and associative complement. This approach ignores the structure of the network and can find compatible pairs of individuals based solely on their personal characteristics – keywords and activity – but ignoring proximity in the

network or third-party connections. The approach also avoids the problem of users being unable to describe themselves adequately nor finding adequate pre-defined keywords provided by the site itself.

In the team's new approach to finding new friends, the "semantic similarity" prong ensures that two different people who list their interests as "photography, football and fashion" and "taking pictures, basketball and selling clothes" would be matched as photography and taking pictures might amount to the same interest, even though their specific keywords do not coincide. The second prong might match the pair based on the complementarity of football and basketball based on these both being sports. The third prong would associate the two based on their third interest fashion and selling clothes in terms of a mutually beneficial business interest.

The team has demonstrated proof of principle for an algorithm based on semantic similarity and conceptual complement with a small sample of users of an online social network, future work will incorporate the third prong of attack, associative complementarity. The matching "error" for the preliminary tests with this sample group was satisfyingly low compared with conventional keyword matching algorithms, the team reports.

More information: "Discovering compatible users in social networks." *Int. J. of Social Network Mining*, 2015 Vol.2, No.1, pp.1 - 18 [DOI: 10.1504/IJSNM.2015.069771](https://doi.org/10.1504/IJSNM.2015.069771)

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