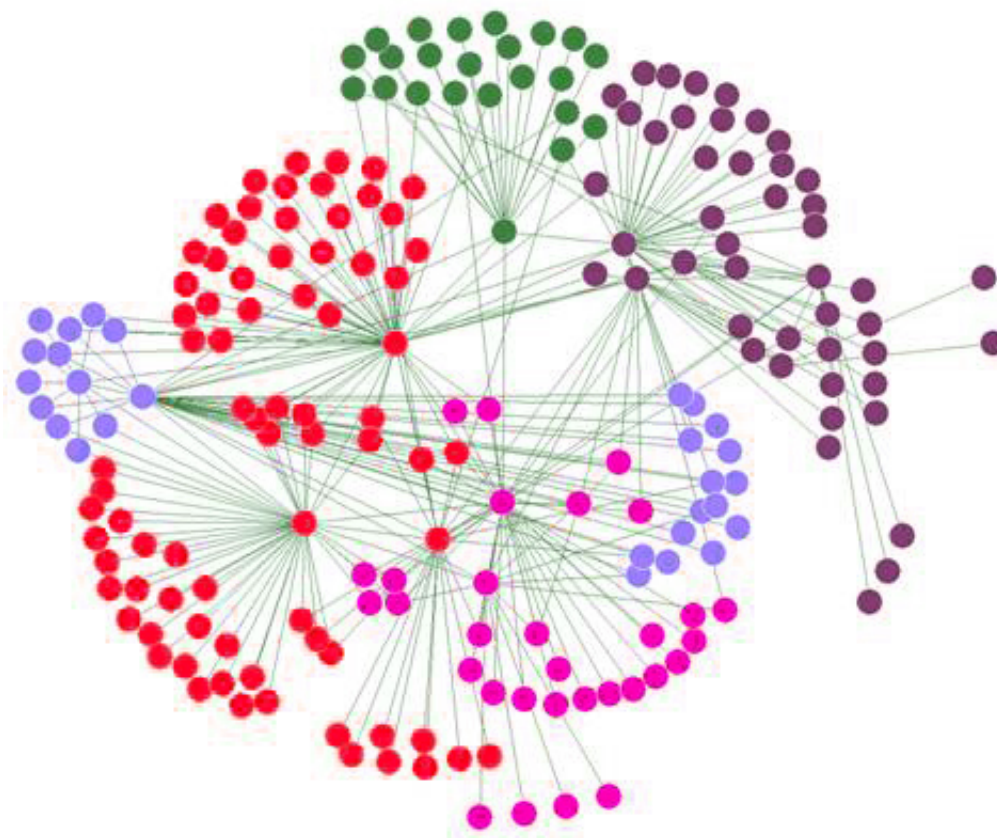# Researcher finds "privacy-friendly" way to identify mobile social networks

November 19 2015, by James Devitt

Social network diagram. Credit: Daniel Tenerife/Wikipedia

An analytical model that finds mobile device users based on their shared interests is a Holy Grail for e-marketers, because relevant, targeted campaigns have long been proven to be the most effective strategy with the highest return. Now NYU Stern Professor Foster Provost and co-

authors have devised a way to connect the same and similar mobile users based on analyzing location visitation data – without compromising users' privacy.

Foster Provost is professor and Andre Meyer Faculty Fellow at NYU Stern and the interim director of the Center for Data Science at NYU. He co-authored "Finding Similar Mobile Consumers with a Privacy-Friendly Geosocial Design" with David Martens, of the University of Antwerp, and Alan Murray, of Coriolis Labs.

The paper, which appears in the journal *Information Systems Research*, was honored as the President's Pick by the president of INFORMS, the Institute for Operations Research and the Management Sciences.

The authors investigated "geosimilarity" – the similarity of anonymized mobile device users based on the distribution of the locations they've been observed to visit. Two users are similar, and thereby connected in a geosimilarity network, when they share at least one visited location. Users are more similar as they visit more shared locations and as those locations are less frequently visited.

Geosimilarity can link individuals geographically as well as by interest. For instance, the model could connect users in a hyperlocal network, such as regular lunch patrons of a particular restaurant. These users could be sent coupons, and so could workers in the same nearby offices, who might then consider patronizing the same establishment. Geosimilarity can help connect individuals' behavior across their different devices as well – for instance, if a person sees an ad on her smartphone and then makes a purchase on her laptop. Besides improved campaign reach, this capability enables a more robust evaluation of the effectiveness of digital marketing.

  More information: Foster Provost et al. Finding Similar Mobile

Consumers with a Privacy-Friendly Geosocial Design, *Information Systems Research* (2015).

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