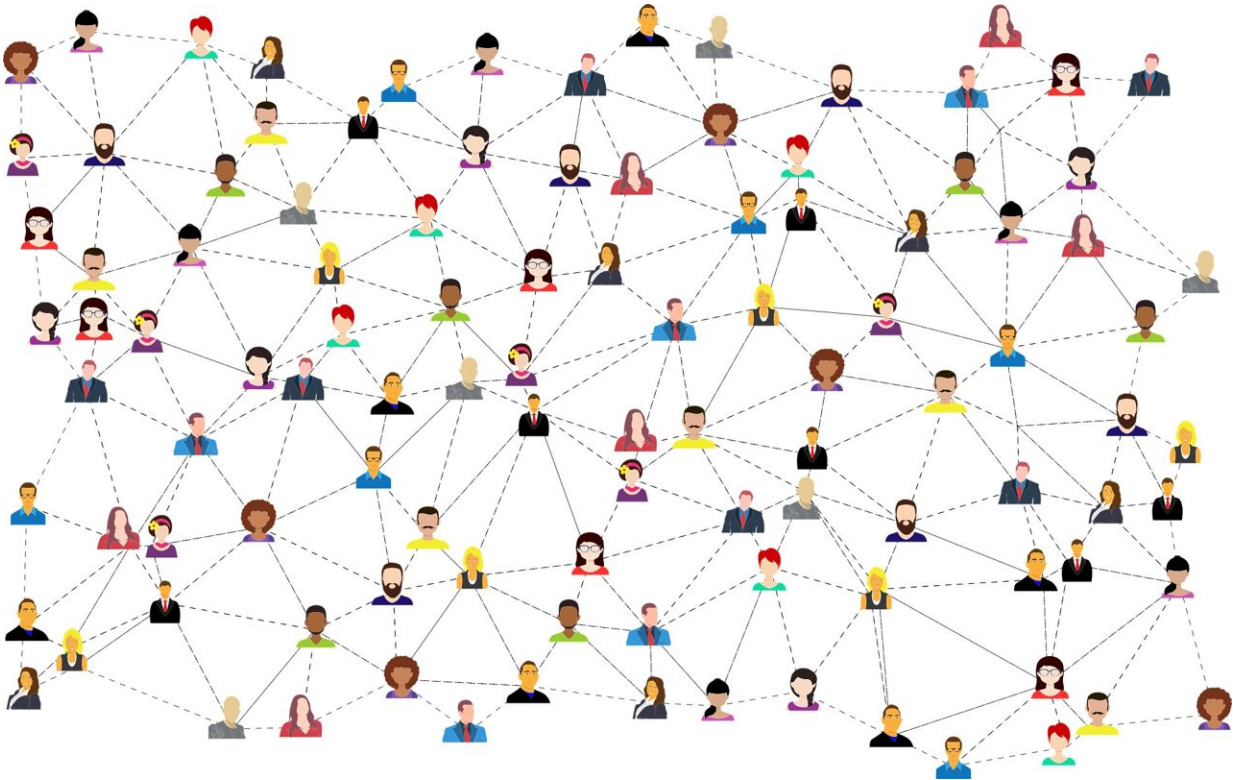# Detecting deviators from the norm in social networks

June 14 2023, by David Bradley

Credit: Pixabay/CC0 Public Domain

Research in the *International Journal of Web Based Communities* introduces a new and accurate approach to identifying abnormal users in social networks by examining several characteristics of user behavior at once. By tapping into the APIs (Advanced Programming Interfaces) of

various social networks, Jian Xie of the College of Education at Fuyang Normal University in Fuyang, China, was able to gather comprehensive data about users, including details about their accounts, the content they post, and the specific ways they behave.

An analysis of this data allowed him to ascribe a set of attributes to users. By applying attribute reduction, he could then eliminate any redundant features and so build a targeted attribute feature set with which to analyze suspicious accounts.

Xie then used the assimilated data to train the XGBoost model, a powerful machine learning algorithm, to create a highly objective function that can quickly flag abnormal behavior on a social network. Xie was able to identify abnormal users with 95% accuracy, sufficient to alert the system's administrators to any putative issues that could then be manually investigated and action taken to block malicious users, for instance. The error level achieved was low as was the speed with which abnormal users could be identified, within fractions of a second, in fact. Xie's approach is faster and more accurate than the previous methods he notes in his paper.

The findings have implications across social networking, where the identification of abnormal users, whether they are malicious third parties, trolls, spammers, bullies, misinformation accounts, fake accounts, hijacked usernames or bots, plays an important role in maintaining the safety of legitimate users and protecting the overall integrity of the digital community.

"This method has the characteristics of high feature extraction accuracy, low identification error rate, and low identification time of abnormal users in social networks," Xie concludes. He suggests that the approach could lay the foundations for developing powerful social network security policies.

Provided by Inderscience

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