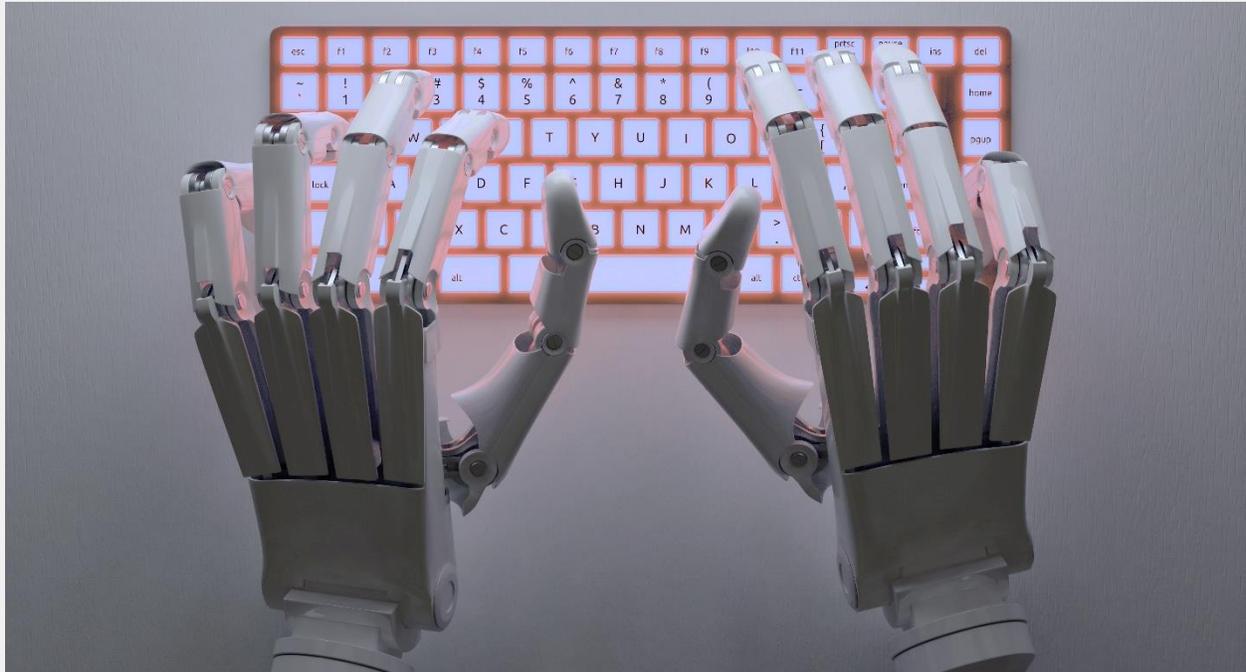# Discovering social bots and bot-nets in social media

In recent years social bots have infiltrated social media. Some reports claim that about 7-10% of Twitter's user base of over 300 million users are bots, and over 24 million Instagram accounts could be spambots created in online black markets. These bots, or computer programs, take on the persona of a user in social media and posts content in various social media platforms. In some cases, they are simple computer programs that post content with intention of making certain hashtags, keywords, or user handles trend, or they are programmed to latch onto a trending hashtag, to increase the visibility of their profile among the user community that is tracking a trending hashtag. In other cases, they are designed to simply to drive traffic to particular URLs that are included in the post. Some bots are more intelligent and post human like-content that is misinformation or propaganda using sophisticated algorithms that leverage natural language processing and graph theory, while others are designed to work collectively as a bot-network, and interact with users to intelligently increase the profile of a user handle by increasing its followers, reach, and engagement.

When brands and agencies use social media analytics tools to understand the reach and engagement associated with their brands, it is important that they be able to identify if any of this is from social bots. Similarly, while identifying influencers, care needs to be taken to understand if the reach of any of the potential influencers, is being driven by bot-nets as opposed to real followers. Similarly, when responding to posts and messaging on social media, marketing and PR departments need to understand what is bot-traffic and what is not. Isolating the signal from the noise of bots can be a challenge.

Several heuristics that are based on frequency of posting, structure of the postings, or follower/following ratios have been suggested in the literature to determine whether an account is a bot or not. Identification of the more sophisticated bots and bot-nets requires advanced machine

learning-based analytics that go beyond simple heuristics. Unfortunately, not many social media analytics tools available in the market today provide analytics that enable brands to perform bot detection. While there are a few research tools that are available, these have not been integrated into analyst workflows focused around finding influencers, topics, sentiment, or communities

Scraawl, a social media analytics tool developed by Intelligent Automation, Inc., is one of the few social media analytics tools available in the market today that offers bot detection as an analytic that is well integrated into the social media analytics workflow. Scraawl's bot detection uses various statistical, temporal, and textual features of posting and historical user profiles to learn bot behavior and identify potential bots. The bot detection analytics work on a corpus of posts and present the user with a list of potential bots in the dataset along with a confidence score associated with the detection. Using Scraawl's analytics-as–a-filter capability, an analyst can then remove all potential bots and their posts, and then run other advanced analytics related to influence discovery or topic modeling. Alternatively, an analyst might want to eliminate all other posts and focus exclusively on the bot posts to gain insight into bot-behavior patterns.

For more information on Scraawl visit www.scraawl.com to request a demo to learn more about the wide range of advanced analytics offered in Scraawl's professional, premium, or enterprise packages. You can also sign up for a free personal account and start exploring some of Scraawl's basic search and analytics capabilities.

About Scraawl

Scraawl is a product of Intelligent Automation, Inc. (IAI), a Rockville, Maryland-based technology innovation company. Our mission is to develop a comprehensive solution for brands to gain actionable insights by listening, searching, extracting, and analyzing social media conversations and large text corpuses. We have developed a set of advanced analytics that leverages the state-of-the-art in big-data, machine learning, natural language processing, and graph theory. Our business case centers on helping brands and agencies understand their global audience, manage customer experience, improve public relations, drive strategic growth, and develop new clients. With analytic capabilities across multiple languages, and its ability to execute on desktops, tablets or mobile devices, our goal is to provide all the analytics a user will ever need – at their fingertips, anytime, and anywhere. For more information on Scraawl visit www.scraawl.com to request a demo to learn more about the wide range of advanced analytics offered in Scraawl's professional, premium, or enterprise packages. You can also sign up for a free personal account and start exploring some of Scraawl's basic search and analytics capabilities.