

FINDING MEANING (AND CUSTOMERS AND PROFITS) IN SOCIAL MEDIA DATA

By Duff McCutcheon

Ebrahim Bagheri, PhD, P.Eng., is not a mining engineer, but his software and semantic computing research is helping business, government and organizations mine vast troves of social media chatter to discover and analyze what people are thinking about, how they feel about it and what it all potentially means for the future.

Bagheri, an associate professor with Ryerson University's electrical engineering faculty, and his team have developed software tools and techniques that dig deep into social media content to find and interpret patterns amid the billions of global users and posts—recognizing positive and negative sentiments about a given subject and providing insights about the underlying meaning.

"I specialize in computational models that analyze user-generated content on the Internet," says Bagheri, recipient of an Engineering Medal in the Young Engineer category at the 2016 Ontario Professional Engineers Awards gala.

"It is technology that can help predict individual or collective behaviour patterns for individuals, groups or society. It helps us to do predictive and prescriptive modelling of patterns, activities and trends within the social network. This means by observing what is happening in the world right now [on social media] we predict what is going to come. And if we can predict what is going to come, we predict the best course of action to take and prescribe that to organizations, governments and individuals."

For example, he is currently working with St. Michael's and Women's College hospitals in Toronto to examine the effects of scientific literature about antidepressant use among pregnant women on peoples' online perceptions. The study seeks to find out if the public's views on pregnant women using antidepressants changes at all immediately after the publication of a scientific paper on the subject.

"We want to see if this literature impacts people's perceptions online," he says. "Are people reacting to the study findings? Is there a shift in people's perceptions? Do people start talking about the study findings? Basically, is there a direct impact from the release of a scientific publication on the social perceptions on that topic?"

To date, the study has observed that the publication of a report will impact the extent to which people discuss the topic. Now the team is examining whether the publication also impacts peoples' sentiments around the topic. "If a publication comes out that is negative about a certain drug, will that also translate into a negative sentiment on social media?" he asks.

RESEARCH POTENTIAL

As more and more people take to social media to discuss, complain and praise, businesses and advertisers are taking



Ebrahim Bagheri, PhD, P.Eng., and his team have created cutting-edge software that recognizes positive and negative emotions in social media content, analyzes patterns and identifies emerging trends in social data.

notice of the potential in Bagheri's research. Vancouver-based predictive analytics company ThinkCX uses Bagheri's research in the advanced social media analytics tools it provides to clients for marketing, research and customer relations. Some Canadian telecommunications companies are also using this technology to identify potential customers.

"The telecoms space is saturated right now and new customers usually come from another provider—poaching each others' customer bases. We provide clients with a very targeted way of finding potential customers at the optimal point of time when their contract is about to expire and then hit them with very targeted advertising," says ThinkCX co-founder Aaron Nielsen.

ThinkCX uses Bagheri's technology to identify potential telecoms customers by analyzing social media signals. For example, it can look back historically at social media and find individuals who had just started a contract with a given provider by analyzing posts that say "just got my new phone from X" or posting a photo of their new phone. From that, ThinkCX can deduce that their contract is coming up in two years and identify potential customers to target at that time. "And once we've identified them we monitor their sentiments towards their current brand, or their interest in a new device coming out—all the kinds of things that would go through your own mind as a consumer—and use that to create a specific pitch based on their concerns and needs," says Nielsen. For example, if they have complained about outages, the potential provider can go in with extremely targeted messaging about the robustness of its network.

"What we've developed with Bagheri is technology that can actually pinpoint things like a customer has his contract expiring or is unhappy with their current provider or is in an area with poor network coverage. Basically it uncovers a wealth of signals that a particular customer is a good candidate to go after—the rifle approach to marketing versus shotgun," says Nielsen. [e](#)