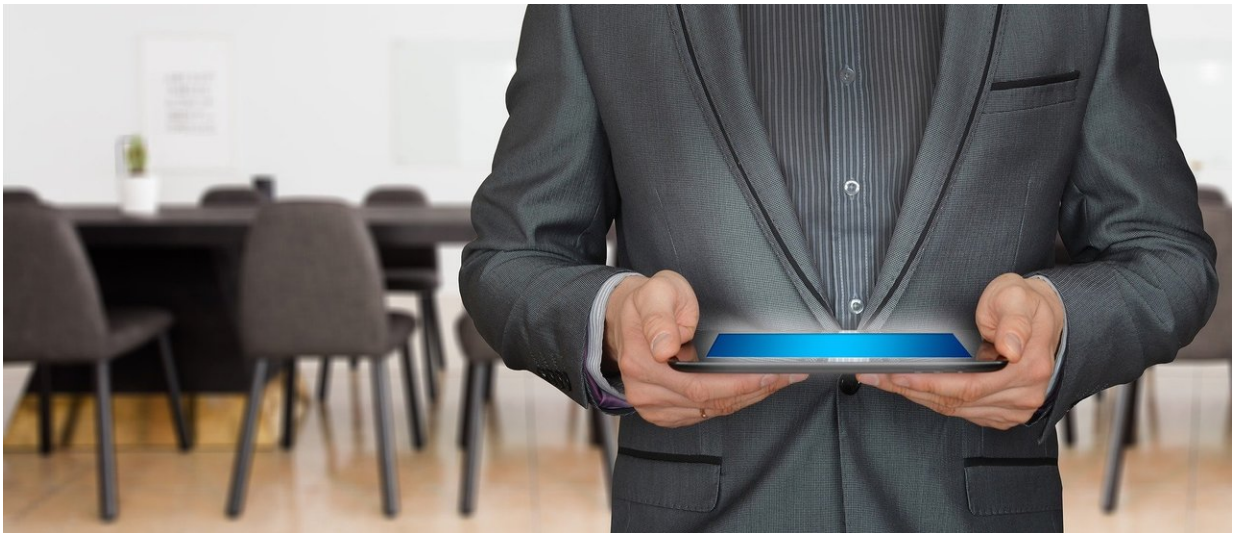


Algorithm streamlines targeted marketing efforts with unrivaled precision

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Credit: CC0 Public Domain

In today's digital age, more consumer data is being collected than ever before. In turn, consumers are bombarded with advertising that misses the mark for identifying the "right" message to the "right" customer, and fails to satisfy customers' needs for the "right" price, place or product.

Firms could do a better job of targeting customers with the data they collect. Unfortunately, traditional computers have difficulty analyzing this enormous amount of information and translating the data into actionable marketing efforts.

To address this problem, Leeds Assistant Professor of Marketing Rico Bumbaca and researchers from the University of Chicago's Booth School of Business and the Anderson School of Management at UCLA created a [new algorithm](#) designed to scale extraordinarily [large data sets](#) and generate highly accurate projections of customers' wants and desires.

Bumbaca and his team describe how this method works in their new paper, "Scalable Target Marketing: Distributed Markov Chain Monte Carlo for Bayesian Hierarchical Models," which was recently published in the *Journal of Marketing Research*.

"The method takes advantage of supercomputers by breaking up the data into smaller chunks and processes each chunk in parallel and combines the results to provide very precise estimates of a consumer's preferences," says Bumbaca.

This information about consumers' preferences can then be used by [firms](#) to more accurately target their messaging and increase the likelihood of consumers' responses to their advertising.

"Customers win by having fewer annoying messages they need to process from firms, and the messages they do receive are spot-on in terms of meeting their needs. Firms win by increasing the efficiency of their marketing efforts at a reduced cost, earning larger returns on their smaller marketing budgets."

The team applied the method for a charitable organization that wants to more efficiently target potential donors. Using their algorithm, they predicted an increase in \$1.6M to \$4.2M in incremental donations per campaign, over the amount of donations using a traditional statistical method.

These results demonstrate that current traditional computers are simply not powerful enough to handle the enormous amount of data nor to reach the potential accuracy that the data can provide.

Bumbaca and his colleagues' work has incredible potential for marketing firms handling data from millions of consumers. The [data analytics](#) firm In4mation Insights has already inquired about the algorithm in hopes of applying it in their business consulting projects.

More information: Federico (Rico) Bumbaca et al. Scalable Target Marketing: Distributed Markov Chain Monte Carlo for Bayesian Hierarchical Models, *Journal of Marketing Research* (2020). [DOI: 10.1177/0022243720952410](#)

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