

# Facebook advertising can be targeted at a specific person: study

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A piece of research undertaken by scientists at the Universidad Carlos III de Madrid (UC3M) and the Graz University of Technology (Austria) shows that an advertising campaign on Facebook can target a specific person, with the campaign being based only on four unique interests assigned to the user by the social network.

Personalisation of online advertising based on our search history and preferences is not a new phenomenon, as it has been developing over many years. However, this new study, presented at an international scientific conference (ACM Internet Measurement Conference), highlights the fact that ads can be personalized and sent to a specific person via the Facebook ad platform using just the user's interests.

This reveals a potential privacy issue, according to the team of researchers, made up of José González-Cabañas, Ángel Cuevas, Rubén Cuevas, Juan López-Fernández, and David García. "It allows hyper-personalized ads to be created that may have a greater effect on the user who receives them," explains Ángel Cuevas, from

the UC3M's Telematic Engineering Department.

This issue exposes users to new risks that arise from the combination of interests. There are two types of data within this framework: firstly, data that directly reveals an individual's identity (such as their ID No., [phone number](#), or email address), which require the individual's consent in order for companies to use them, and secondly, data that cannot be attributed to a particular user, such as their interests, gender, or age. "What if we can identify an individual using Facebook without their permission just by combining their interests?" the researchers ask.

From a theoretical point of view, these scientists have demonstrated that very little user information, only four rare and specific interests, make them unique in a database consisting of billions of users. Previous studies have pointed to this, however, they worked with a much smaller database of users, of about one million users. This ability to segment users in a very specific manner is called "nanotargeting" by the researchers and in practical terms, it has been demonstrated that this can be done on Facebook with almost zero cost. In other words, reaching an individual user among the 2,800 million active profiles on the social network is possible.

To do this, researchers conducted an experiment: they created 21 advertising campaigns that were intended to reach three of the authors of this work. "On the one hand, we are the advertiser on Facebook and, on the other, the advertisement is targeted at each of us. We built a model to see how many interests we would need in order to reach a specific person with a high probability, then we validated it using the campaigns," explains another researcher from the UC3M who wrote this work, José González Cabañas. "By combining five random interests, the ad did not reach the chosen user. However, the probability of success increased as the number of interests rose to 7, 9, etc. We saw

that in the real experiment, 20 and 22 interests guaranteed success. However, only four interests are required, if they are very rare and specific interests."

From a marketing point of view, this option could be extremely useful for companies that want to create hyper-personalized campaigns for their customers. However, from a user protection perspective "what we are actually asking the advertising platforms is that they take steps that prevent nanotargeting from being carried out. In this sense, the advertising platform should, in accordance with parameters defined by the advertiser and estimations provided by the platform, ensure that the advertisement may reach a group of at least 1000 users, for example, in order to protect an individual's privacy and avoid nanotargeting," concludes Ángel Cuevas.

**More information:** José González-Cabañas et al, Unique on Facebook, *Proceedings of the 21st ACM Internet Measurement Conference* (2021). [DOI: 10.1145/3487552.3487861](https://doi.org/10.1145/3487552.3487861)

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