


SOCIAL MEDIA

Have researchers cracked the code to TikTok virality?

A team studied a dozen popular challenges — from the Renegade to Bored in the House.

A large, stylized letter 'U' graphic. The 'U' is filled with a light gray color and has a thick red outline. It is positioned on the left side of the page, partially overlapping the first few words of the main headline.

Understanding how videos go viral is creators' holy grail — and for obvious reasons: Crack it and they're guaranteed perpetual fame, and with it, potentially *lots* of money.

Naturally, given those incentives, figuring out how the app of the moment, TikTok, works has been a fixation of creators, journalists, and academics alike.

ADVERTI

A crucial part of TikTok's content engine is the hashtag

challenge, which sparks trends that can cascade through the app. A hashtag challenge works by combining the standard unit of conversation on many social media platforms — a catchy hashtag — with some kind of on-camera conceit, like a dance. The Renegade dance was one hashtag challenge; others feature jokes with different payoffs.

“Even the biggest creators riff upon trends started by smaller accounts,” says Brendan Gahan, partner and chief social officer at Mekanism, a San Francisco–based creative advertising agency, and the author of a guide to creating a TikTok trend. “Many users even take it upon themselves to scour TikTok to identify emerging trends. It’s become so common that #trendalert has become a popular hashtag in its own right. The appeal of following this hashtag is that all you have to do is jump on whatever trend they’ve identified.”

A new academic paper called “Will You Dance to the Challenge? Predicting User Participation of TikTok Challenges” analyzes the likelihood of a user participating in one of 12 popular challenges on TikTok. The researchers used that data to create a machine-learning model that’s able to predict future participation in a hashtag challenge with more than twice the accuracy of baseline models.



It's worth noting that the level of accuracy — around 49 percent — still isn't great. But then, success on any social media platform — never mind one as hyperfast as TikTok, where Andy Warhol's 15 minutes of fame are telescoped into 15 seconds or less — is difficult to predict.

The academic team behind the paper, including lead author Lynnette Hui Xian Ng at Carnegie Mellon University, acknowledge that. Ng decided to look into the likelihood of user participation in hashtag challenges on TikTok for a relatable reason: "Because I was spending too much time on TikTok." Her supervisor, Roy Ka-Wei Lee, assistant professor at Singapore University of Technology and Design, was looking into TikTok and noticed her preoccupation with the app.

The researchers' machine-learning model collects data from individual users selected from a group of 1,300 trial participants, while also monitoring the videos that are popular on the app under any one of 12 hashtag challenges. The video data includes the written caption on a video, as well as the content of the video itself, which is divided into frames. The text and images from a video were then analyzed to see whether they were replicating the actions involved in a hashtag challenge, and what those actions are.

"We took the videos related to a challenge and sought out certain patterns and features in them to identify the average video, and what it looks like," explains Lee. A dozen of the most viral challenges in 2020 were monitored, including the **Blinding Lights challenge**, **#Boredinthehouse**, and the Renegade, the dance **invented by Jalaiah Harmon** and co-opted and popularized by **TikTok's highest earner**, Charli D'Amelio.

The major finding? "A user is most likely to participate in a challenge if the challenge nature suits his interests," the authors write. Put more bluntly: You have to be interested in the particular niche the challenge is appealing to in the first place in order to participate in it. Most jocks aren't going to be painting their nails on camera, for instance. Broader challenges, therefore, are more likely to have the widest appeal. That "wide appeal" is what the researchers call "social contagion."

SOCIAL CONTAGION

Yet social contagion isn't easily achieved. Internal data from TikTok suggests nine in 10 users don't ever post a single video — so making a challenge go viral requires motivating people to post who predominantly don't want to.

"Contributing content takes a lot of effort," says Lee.

"[Learning] what motivates people to do it was our goal." One motivator the researchers found was who had previously done the challenge. "We picked out challenges that were quite viral, some of them because they had celebrities participating," says Ng.

The research highlights how user participation in a challenge is far trickier to pin down than you'd think. Even those in TikTok's editorial team, who have a god's eye view of the app and what's going viral, have professed to being baffled at how and why things go viral.

Plenty of other people, meanwhile, are giving it in-depth thought. "Challenges can be a way to help make a message go

viral, like **the ice bucket challenge**,” says Elyse Graham, associate professor at Stony Brook University, “but this paper suggests that there’s a risk that most challenges devised to make a message go viral will be locked in specific silos of existing beliefs and interests.

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“Is their mastery of virality helping them to cross invisible political barriers that their parents never could?” she continues. “Or is it a case of two steps forward — your message can go

viral even if you're a kid in the schoolyard — one step back — your message will be engaged with mostly by people who see the world as you do?"

She does point out that it's not guaranteed that hashtag challenges will only exist within a silo. "It is the case on TikTok that challenges and trends that go viral within a specific belief group also go 'echo-viral'" — an equal but opposite reaction — "among whatever group believes the opposite" through the use of stitches and duets.

The academics next want to explore what other elements of the app may make users participate in a challenge or not. As for the million-dollar question that plagues every social media creator: how to guarantee runaway success? "I would say it's a mixture of the dance being used, and how to write the caption to be catchy enough for people to want to look at the video and participate in the challenge," says Ng.

