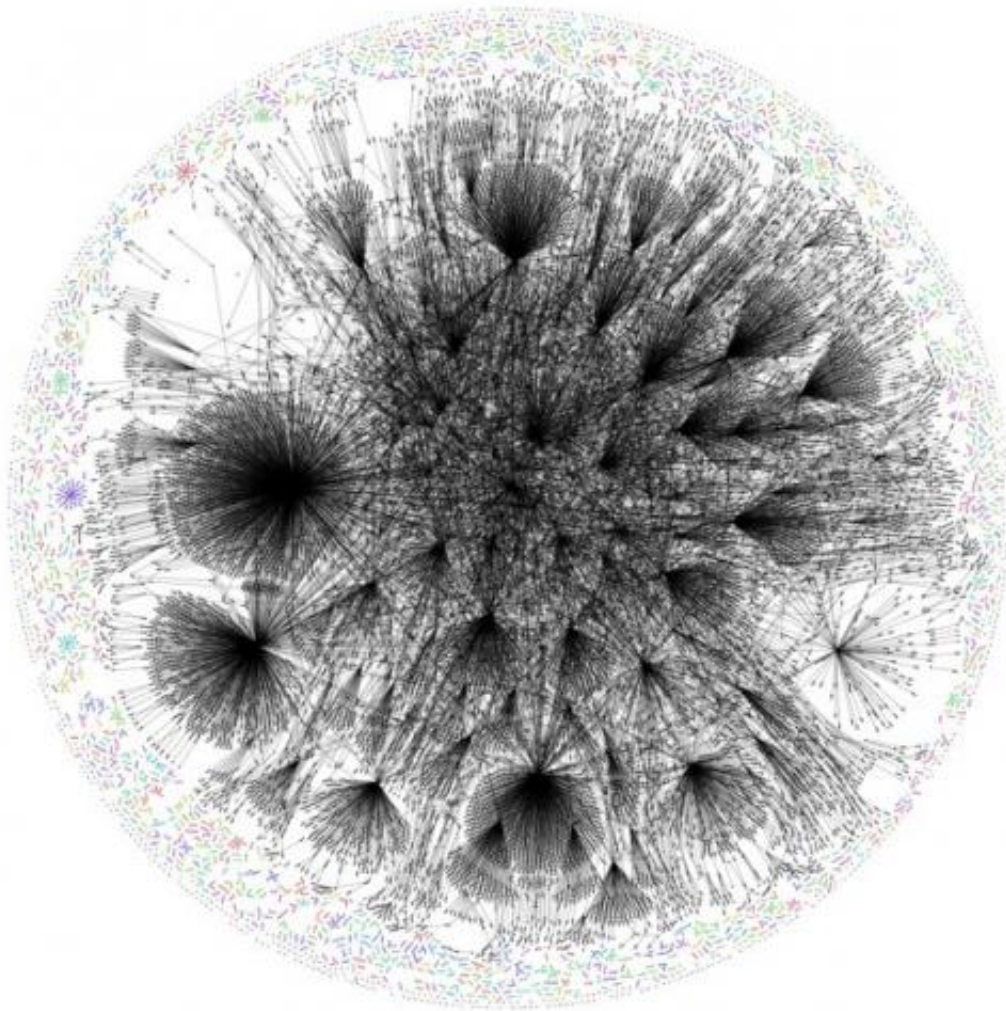# Mathematics student develops model that can predict trends via Twitter

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University of Twente student Marijn ten Thij has developed a mathematical model that can simulate the emergence of trends via Twitter. This model makes it simpler to understand how trends emerge on Twitter and how they develop further. According to ten Thij, "With this model, we can predict if a topic on Twitter will develop into a trend or an event in real life".

Ten Thij used three data sets with tweets to develop the mathematical model, one of which consisted of [tweets](#) on Project X in Haren. Ten Thij analyzed all of the retweets about the event in the period before and right after the riots. The mathematics student purposefully omitted any information about the Twitter users themselves from consideration in his research. For example, his research did not include whether a particular Twitter user was influential, such as a Dutch celebrity. He wanted to see, independent of the [user information](#), if he could predict a trend. Ten Thij: "You often see different groups of people talking with one another about the same topic on Twitter, for example, in Twente, in Amsterdam and a group in Eindhoven. The point at which a trend may emerge on Twitter is the moment at which these groups also connect with each other".

Trend detection

Ten Thij entered the retweets on Project X into a smart [mathematical model](#) that can simulate how Twitter users are connected to each other through retweets. "If a trend is connected with an event in real life, we see that different user groups retweet each other's messages and that users more frequently tweet on the same topic. In the Project X data, we see this a day before the event itself happens."

Nelly Litvak, senior lecturer in the department of Stochastic Operational Research and ten Thij's supervisor: "I was awarded a grant by Google for our research into [trend](#) detection and we will certainly continue with our

work. The future can never be predicted with 100% certainty, but we strive to provide answers with a high degree of certainty."

Marijn ten Thij studied Applied Mathematics at the University of Twente. He recently graduated from the department of Stochastic Operations Research under Prof. Richard J. Boucherie, PhD. This research is carried out at the Centre for Telematics and Information Technology (CTIT). Dr Nelly Litvak was Ten Thij's supervisor. He completed his thesis, titled "Modelling trends in social media", at TNO (Netherlands Organisation for Applied Scientific Research) within the Performance of Networks and Systems expertise group (PONS).

Provided by University of Twente

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