Using artificial intelligence to foil online dating scams

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Dating apps and websites could soon use computing algorithms that 'think' like humans to pinpoint fake profiles designed to con victims out of thousands of pounds.

Algorithms with this capability have been developed as part of wide-ranging research into combating online fraud led by the University of Warwick and funded by the Engineering and Physical Sciences Research Council (EPSRC) and the Economic and Social Research Council (ESRC).

The new algorithms have been designed specifically to understand what fake dating profiles look like and then to apply this knowledge when they scan profiles submitted to online dating services. They automatically look out for suspicious signs inadvertently included by fraudsters in the demographic information, the images and the self-descriptions that make up profiles, and reach an overall conclusion as to the probability of each individual profile being fake.

When tested, the algorithms produced a very low false-positive rate (the number of genuine profiles mistakenly flagged up as fake) of around 1 per cent. The aim is now to further enhance the technique and enable it to start being taken up by dating services within the next couple of years, helping them to prevent profiles being posted by scammers.

With Valentine's Day fast approaching, the news that these artificial intelligence (AI) capabilities have the potential to help thwart so-called 'rom-con' scams will be very welcome to the millions of people who use online dating services in the UK and worldwide. In these scams, fraudsters target users of dating websites and apps, 'groom' them and then ask for gifts of money or loans which will never be returned. In 2017, over 3,000 Britons lost a total of £41 million in such incidents, with an average loss of £11,500.

The work on the textual and other computer characteristics of online dating messages and profiles was led by Professor Awais Rashid (now at the University of Bristol, previously at the University of Lancaster) and Dr. Gianluca Stringhini (previously at UCL and now at Boston

University). It formed just one aspect of an overall research initiative that has also involved King's College London, Cardiff University and partners worldwide and has aimed at boosting efforts to detect and prevent mass fraud that exploits online channels. Other aspects of the initiative have, for example, focused on better understanding of the psychology of people most likely to become repeat victims of online scams.

The project was primarily led by Professor Monica Whitty (now at the University of Melbourne) with Professor Tom Sorell of the University of Warwick taking over in the final stages. Professor Sorell says: Online dating fraud is a very common, often unreported crime that causes huge distress and embarrassment for victims as well as financial loss. Using AI techniques to help reveal suspicious activity could be a game-changer that makes detection and prevention quicker, easier and more effective, ensuring that people can use dating sites with much more confidence in future.

More information: DAPM: Detecting and Preventing Mass-Marketing Fraud (MMF). gtr.ukri.org/projects?ref=EP %2FN028112%2F2