

# Online gambling to get safer through better prediction of addiction

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A new 'early warning' system that automatically informs gamblers as soon as their behaviour shows signs of turning into an addiction is

helping people engage in the pastime responsibly.

The system pinpoints whether a player's [gambling](#) patterns are exhibiting signs of risk and starting to match those of previous players who asked online gambling sites to block them, for a fixed period, to stop them becoming 'hooked' – an option known as 'self-exclusion'.

City University London has worked with software analytics company BetBuddy to enhance the accuracy of the computer models underpinning the system according to the very latest understanding of the psychological pathways to gambling addiction.

The research was funded by the UK's innovation agency, Innovate UK, under their Data Exploration programme supported by contributions from the RCUK Digital Economy Theme, Engineering and Physical Sciences Research Council (EPSRC), the Economic and Social Research Council (ESRC) and the Defence Science and Technology Laboratory (Dstl).

"All UK gambling providers are legally obliged to offer customers a self-exclusion option," says Dr Artur Garcez of City University London.

"Our aim has been to help BetBuddy test and refine their system so that it gives providers an effective way of predicting at an earlier stage self-exclusion as well as other signals or events that indicate harm in gambling. This enables customers to use online gambling platforms more securely and responsibly."

Dr Garcez's team found that by harnessing a machine learning method known as 'random forests' and applying it to a real-world online gambling dataset, the system could achieve an impressive 87 per cent accuracy in predicting playing patterns which were likely to evolve in an unhealthy direction.

Professor Philip Nelson, EPSRC's Chief Executive, said: "This project is an example of how artificial intelligence and machine learning methods can be used to address an important social problem. The RCUK Digital Economy Theme is a fine example of inter-disciplinary and partnership working for the benefit of society."

Armed with information on gambling patterns, providers can decide not to send players marketing material for a period or they can use the information to alert a player to a potential problem.

"Although systems of this kind are already in use, none are believed to have published peer-reviewed research that evidences the same levels of accuracy and reliability as the BetBuddy system," says Dr Garcez. "Early detection and prevention of problem gambling is not only in the interest of those who engage in online gambling – it can also help deliver a more stable and growing market place for online gambling providers".

Dovetailing with these very promising results, a key aspect of City's work with BetBuddy has been to develop and harness a better understanding of the root causes of problem behaviour in [online gambling](#). First presented in September 2015 at the National Center for Responsible Gaming (NCRG) conference held in Las Vegas, US, key work in this area has included an analysis of how to achieve a balanced approach that maintains high accuracy but avoids alarming gamblers unduly, and the development of a 'knowledge extraction' method capable of explaining results to gambling operators and gamblers themselves.

"City University London has enabled us to build more robust and accurate prediction models and apply new, creative algorithms to gambling data. By applying their expertise in knowledge extraction techniques to 'black box' prediction models, clinicians, regulators, and industry can better understand how these models can predict behaviour and better protect consumers at risk of harm" said Simo Dragicevic

Chief Executive of BetBuddy.

Online gambling is a global growth industry and this year in the EU alone revenues are expected to reach €13 billion. But the problems of addiction that it can bring are well known, contributing to the 593,000 problem gamblers that, according to NHS figures, are present in Britain today.

Provided by Engineering and Physical Sciences Research Council

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