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Feb. 16, 2016 – Sometimes computers just can't solve the problem. How would a computer, for example, decide which image in a stack of photos is the prettiest, or know which retail store is more fun to shop in? When a task requires a human touch, problem solvers turn to online crowdsourcing tools for the solution.
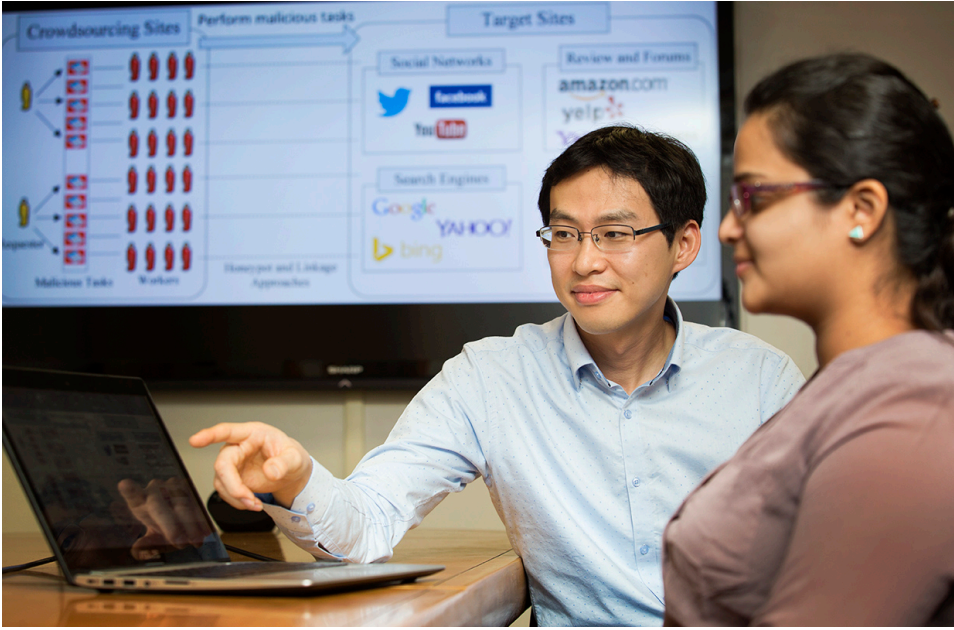

In recent years, crowdsourcing platforms have helped break down big, complex problems in areas like audio transcription, image identification, opinion studies, scientific research and more. Anyone with a computer can access a tiny piece of a problem and contribute to the solution that would otherwise be insurmountable for a single individual.

But there's also a sinister side to crowdsourcing: the ability to organize large masses of paid shills who spread malicious content around the Web. These so-called 'crowdturfers' post false product reviews on e-commerce sites and create fake social media accounts to spread spam or malicious URLs. The combined effect of crowdturfing creates ripples through the entire web ecosystem and undermines even basic trustworthiness online.

At Utah State University, computer science researchers are creating new tools that detect and target crowdsource manipulation. Dr. Kyumin Lee, an assistant professor of computer science at USU and director of the Data Science Lab, recently received a National Science Foundation CAREER Award to combat this growing and lucrative corner of the Internet.

The $516,000 grant will help Lee and his team create the algorithms and systems for defending the open web from emerging threats. The goal of the project is to analyze the behavior of crowdturfers and stop them in their tracks. Lee said it's even possible to create a blacklist of suspicious crowdsourced tasks to help users distinguish legitimate tasks from malignant ones.

"Early detection of malicious tasks has the potential to transform our solutions for secure and trustworthy information systems," said Lee. "Given our classification and clustering techniques, detecting almost all crowdturfers becomes a distinct possibility in the near future."

The study will enable authentic crowdsourcing service providers and target sites, including social media, product review sites and search engines to detect crowdsource manipulation while protecting information quality and trust.

As part of the project, Lee will develop two new courses related to data science and will improve on ways to recruit more female students to study computer science.

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