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## ACCEPTED MANUSCRIPT

# Combating the Evolving Spammers in Online Social

## **Networks**

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#### Biographical sketch

Qiang Fu received his BEng degree in Computer Science from Jilin University, China in 2015. Currently, he is an MSc candidate in the Computer Science Department at Jilin University, China. His main research focuses on the Security of Online Social Networks.

Bo Feng received his BEng degree in Computer Science from Jilin University, China in 2016. Currently, he is an MSc candidate in the Computer Science Department at Jilin University, China. His main research focuses on the detection of malicious URLs.

Dong Guo is currently a lecture in Computer Science at Jilin University, China. He received his BSc, MSc, and PhD degrees also from Jilin University in 1999, 2005, and 2009, respectively. His main research interest is cloud storage security.

Qiang Li is currently an associate professor in Computer Science at Jilin University, China. He received his BSc, MSc, and PhD degrees also from Jilin University in 1998, 2001, and 2005, respectively. His main research interests are in network security and the detection of malicious code.

#### **Highlights**

- A dynamic metric model to measure the changes of users' activities is proposed.
- We tracked users' activities for three months to build our dataset.
- We design new features to describe the temporal evolution patterns of users.
- A detecting framework combining unsupervised clustering and supervised classification.
- Our approach achieves better performance than conventional detection methods.

#### Abstract

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