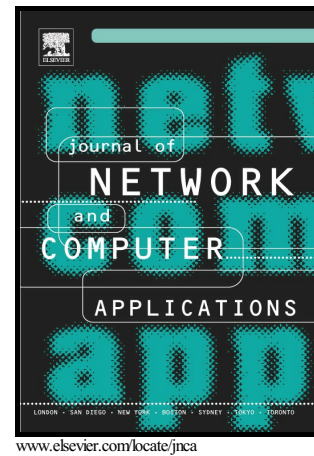


Author's Accepted Manuscript

Malicious accounts: Dark of the social networks

Kayode Sakariyah Adewole, Nor Badrul Anuar,
Amirrudin Kamsin, Kasturi Dewi Varathan, Syed
Abdul Razak



PII: S1084-8045(16)30300-9
DOI: <http://dx.doi.org/10.1016/j.jnca.2016.11.030>
Reference: YJNCA1782

To appear in: *Journal of Network and Computer Applications*

Received date: 2 September 2016
Revised date: 2 November 2016
Accepted date: 28 November 2016

Cite this article as: Kayode Sakariyah Adewole, Nor Badrul Anuar, Amirrudin Kamsin, Kasturi Dewi Varathan and Syed Abdul Razak, Malicious accounts Dark of the social networks, *Journal of Network and Computer Applications* <http://dx.doi.org/10.1016/j.jnca.2016.11.030>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain

Malicious accounts: Dark of the social networks

Kayode Sakariyah Adewole^{a,*}, Nor Badrul Anuar^{a,*}, Amirrudin Kamsin^a, Kasturi Dewi Varathan^a, Syed Abdul Razak^b

^a Faculty of Computer Science and Information Technology, University of Malaya, 50603 Kuala Lumpur, Malaysia

^b Faculty of Arts and Social Sciences, University of Malaya, 50603 Kuala Lumpur, Malaysia

adewole.ks@siswa.um.edu.my

badrul@um.edu.my

amir@um.edu.my

kasturi@um.edu.my

syedabdrazak@um.edu.my

Abstract

Over the last few years, online social networks (OSNs), such as Facebook, Twitter and Tuenti, have experienced exponential growth in both profile registrations and social interactions. These networks allow people to share different information ranging from news, photos, videos, feelings, personal information or research activities. The rapid growth of OSNs has triggered a dramatic rise in malicious activities including spamming, fake accounts creation, phishing, and malware distribution. However, developing an efficient detection system that can identify malicious accounts, as well as their suspicious behaviors on the social networks, has been quite challenging. Researchers have proposed a number of features and methods to detect malicious accounts. This paper presents a comprehensive review of related studies that deal with detection of malicious accounts on social networking sites. The review focuses on four main categories, which include detection of spam accounts, fake accounts, compromised accounts, and phishing. To group the studies, the taxonomy of the different features and methods used in the literature to identify malicious accounts and their behaviors are proposed. The review considered only social networking sites and excluded studies such as email spam detection. The significance of proposed features and methods, as well as their limitations, are analyzed. Key issues and challenges that require substantial research efforts are discussed. In conclusion, the paper identifies the important future research areas with the aim of advancing the development of scalable malicious accounts detection system in OSNs.

Keywords: online social network; social spam; malicious behavior; fake account; phishing detection; Sybil

1 INTRODUCTION

Online social networks (OSNs) have emerged as important platforms for people to communicate across the globe. Since the introduction of the first OSN, SixDegree, in 1997 several social networking platforms, such as Facebook, Twitter, and LinkedIn have gained popularity (Heidemann et al., 2012). A recent report from Statista in April 2016 shows a tremendous growth in social network data. Market leader Facebook was the first social networking site whose registered users have surpassed 1 billion and the number of its monthly active users is currently estimated at 1.59 billion (Statista, 2016). The eighth-ranked photo-sharing app, Instagram, had more than 400 million monthly active users. Meanwhile, Tumblr microblogging had over 555 million active users on its network. Twitter microblogging social network was released in 2006 and has attracted more than 320 million monthly active users (Statista, 2016), posting over 500 million tweets per day (DMR, 2015). The popularity of OSNs attracts a lot of attentions among social network users. For instance, organizations leverage social platforms to promote their products and reach out to customers directly on their networks. Celebrities utilize OSN to communicate with their fans. Academia takes advantage of them to record large citations for their articles, and news media distribute their breaking news on these platforms (Cresci et al., 2015; Igawa et al., 2016). Individual also uses social networks to connect with long-lost friends, create text-based contents, publish contents, browse friends' profiles, post photos, share multimedia files, and engage in other numerous social activities. As a consequence, the rapid growth of social networks has triggered a dramatic increase in malicious activities (Fire et al., 2014).

Download English Version:

<https://daneshyari.com/en/article/4956069>

Download Persian Version:

<https://daneshyari.com/article/4956069>

[Daneshyari.com](https://daneshyari.com)