PROFILING FLASH MOB ORGANIZERS IN WEB DISCUSSION FORUMS

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Abstract The flash mob phenomenon has been well studied in sociology and other disciplines, but not in the area of digital forensics. Flash mobs sometimes become violent, perpetrate criminal acts and pose threats to public safety. For these reasons, understanding flash mob activities and identifying flash mob organizers are important tasks for law enforcement. This chapter presents a technique for extracting key online behavioral attributes from a popular Hong Kong discussion forum to identify topic authors – potential flash mob organizers – who belong to a vocal minority, but have the motivation and the ability to exert significant social influence in the discussion forum. The results suggest that, when attempting to interpret flash mob phenomena, it is important to consider the online behavioral attributes of different types of forum users, instead of merely using aggregated or mean behavioral data.

Keywords: Criminal profiling, discussion forums, flash mob organizers

1. Introduction

A flash mob is a sudden public gathering at which people perform unusual or seemingly random acts and then quickly disperse; it is typically organized by leveraging the Internet and/or social media [9]. Although some researchers believe that it is inappropriate to use the term to describe political protests or criminal acts organized via the Internet or social media, it is clear that the organization of flash mobs for political protests and criminal purposes is an increasing trend [6].

The Umbrella Movement in Hong Kong, which was launched in late September 2014, leveraged several social media platforms to create popular support and motivate citizens to participate in many street demonstrations against the Hong Kong Government [10, 17]. After the Umbrella Movement ended in December 2014, the street demonstrations
in Hong Kong persisted, but in a very different form. Specifically, a number of flash-mob-like invocations were posted by organizers on popular social media platforms under innocuous topics such as “shopping,” “recover a district” and “anti-traders.” The term “shopping” actually refers to protests against government policies, “recover a district” refers to protests against mainland Chinese tourists and “anti-traders” refers to protests against Mainland Chinese citizens who take advantage of multiple entry visas to import goods from Hong Kong to Mainland China. These flash-mob-like activities are very different from traditional street protests. In many instances, flash mobs suddenly emerged in and around tourist shopping areas to disrupt business and traffic, and then dispersed. Clearly, such flash mobs could become aggressive and pose threats to social order [14].

This research focuses on understanding flash mob activities with the goal of identifying potential flash mob organizers in web forums before the mobs manifest themselves. Specific questions are: What are the key online behavioral attributes of flash mob organizers? How can these attributes be used to identify flash mob organizers at an early stage? How can the social influence of flash mob organizers be measured?

2. Related Work

Studies of flash mob phenomena have primarily been conducted by researchers in the areas of sociology and public health. Many of these studies report that the increasing use of social media enhance the potential that flash mobs will be created for criminal purposes and may therefore pose threats to public safety [6, 12, 13]. In the cyber domain, Al-Khateeb and Agarwal [1] have proposed a conceptual framework that uses hypergraphs to model the complex relations observed in deviant cyber flash mob social networks.

A search of the literature reveals that there are no studies related to classifying web discussion forum users based on their social influence. The classification of users in online discussion forums is important because it can help identify individuals who are influential at instigating flash-mob-like activities at an early stage. Having classified web discussion users into groups, it is useful to borrow the concept of social influence as used in other fields to compare the influencing power of the different groups.

The concept of social influence has been studied extensively in sociology, marketing and political science. In recent years, several researchers have focused on social influence in social media platforms such as Facebook and Twitter. The approaches for analyzing social influence