

Detecting and reasoning collusive activities in online media

Ph.D. Thesis Defense

ON

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Abstract: Online media platforms have enabled users to connect with individuals, organizations and share their thoughts. Other than connectivity, these platforms also serve multiple purposes - education, promotion, updates, awareness, etc. Increasing the reputation of individuals in online media (aka Social growth) is thus essential these days, particularly for business owners and event managers who are looking to improve their sales and reputation. The natural way of gaining social growth is a tedious task, which leads to the creation of unfair ways to boost the reputation of individuals artificially. We refer to such unfair ways of bolstering social reputation in online media as collusion in online media.

This thesis covers various aspects of collusion: collecting data from various blackmarket services providing collusive appraisals, a large-scale analysis of collusive entities and designing state-of-the-art models for detection of collusive entities in multiple online media platforms. First, we design approaches to identify collusive Twitter users who request for artificial retweets from the blackmarket services using user's metadata properties. Here, we also explore the differences between the working of various types of blackmarket services. Second, we extend our previous approaches to identify collusive Twitter users using user's network properties. Third, we consider another type of collusive Twitter appraisal (followers) and also study the collusive entities present in other online media platforms. Fourth, we propose an approach to detect core users of the blackmarket services and show the differences in the working of core and non-core users. Finally, we release a multi-platform data repository of collusive entities collected from two blackmarket services.