

## ABSTRACT

The aim of this thesis is to eradicate friend spam by taking into account Social Rejections using the "Thinking like a Vertex" approach [1]. The rapid development of online social networks (OSN's) caused numerous profit-related effects which diversified the OSN's structure. For this reason, social graphs were formed that include both real and Sybil (fake accounts which pretend multiple personality) accounts.

This phenomenon spans user privacy and trustworthiness between users' aspects. One of the most prevalent Sybil attack modes is Friend Spam: fake accounts initiate unwanted friend requests. In particular, Cao et al. [2] and Lu et al. [18] emphasized the fact that it is difficult for spam attackers (Sybil accounts) to attack directly specific real users and to be sure that they will accept their friend request, thinking that some of the real users have limited knowledge about their security in OSN's. So, friend spam strategies of mimicking real account's behavior and the creation of collusions in OSN's gives the advantage to Sybil accounts to bypass the online social graph based defense tools and connect with real accounts more massively and effectively.

In fact, the most significant point of today's research is the urgent need of processing the dynamic social graphs in real time due to the need of handling the continuous growing amount of data can be possible with the help of large scale parallel computing frameworks. Nevertheless, the described platform of the system [2] can leverage only massive offline processing. This drawback makes many applications such as Rejecto and VoteTrust [13] –Sybil detection mechanisms, which require real time updates of changes in the underlying graph, a very time consuming process.

Finally, this thesis leverages the advantages and potentials of Rejecto [2] on top of Apache Giraph framework [6] -the contributor in OSN's companies like Facebook.

**Keywords:** Fake Accounts Detection, Friend Spam, Apache Giraph, Pregel, Graph Partitioning, Online Social Networks, Facebook, Big Data.