Abstract:

As people are continually more active in social media, a plethora of information from individual users is released into the internet and, in most cases, discoverable by nearly any other user. This poses a problem because many account-recovery mechanisms depend on security questions to validate a user and hackers can infer a security question answer through an analysis of available information in social media. To demonstrate the amount of information that can be extracted from a user’s account, this paper describes an approach to extract and analyze the information available in their social media. The user’s social media account information is collected to create verified links between the user and their online profiles, then scraped their account for all available data. The user’s social media information is parsed using various Natural Language Processing techniques to extract the machine-relevant information. An ontology group was developed to describe behavioral, social, physical, and ideological relationships and populate its corresponding Knowledge Graph. Because the information in a Knowledge Graph is easily accessed by both humans and machines, can have mathematical Graph Theories applied to it, and is easily transferable, it can be used in a wide variety of applications.