Multi-modal Website Factuality and Reliability Profiling

Project Description: Given the recent proliferation of disinformation online, there has been also growing research interest in automatically debunking rumors, false claims, and "fake news". A number of fact-checking initiatives have been launched so far, both manual and automatic, but the whole enterprise remains in a state of crisis: by the time a claim is finally fact-checked, it could have reached millions of users, and the harm caused could hardly be undone. An arguably more promising direction is to focus on fact-checking entire news outlets, which can be done in advance. Then, we could fact-check the news before they were even written: by checking how trustworthy the outlets that published them are.

We already do this in the Tanbih project (http://tanbih.qcri.org/) and the Tanbih news aggregator (http://www.tanbih.org/), but primarily using textual information, and the project would try to go into multimedia content. As news sources often rely on multimedia data, such as images and videos, and utilize various distribution platforms to convey their message more effectively. To date, however, proposed approaches targeting this challenge have not sufficiently exploited the multi-faceted nature of the problem. This project aims at bridging this gap by incorporating secondary information sources to complement textual information in order to make more reliable decisions. More specifically, the project will focus on deriving new intelligence related to the provenance and the authenticity of multimedia data as well as the domain reputation to the decision process.

Planned research activity allows participation of 3-4 summer interns.

Duties/Activities: The students will be asked to work on one or more of the following:

- Domain reputation evaluation: Information on network infrastructure of the site that distributes questionable news will be extracted and compared to known benign sources.
- Metadata validation: Metadata of the collected media items will be examined to identify the nature modifications applied to originals.
- Media provenance detection: Information on the source of a media item will be identified and used to uncover relations between seemingly unrelated sources.
- Tampering detection: Telltale signs of basic tampering operations will be identified to obtain discriminative information.

Required Skills: Programming experience in Python and C/C++.

Preferred Intern Academic Level: Self-motivated graduate or undergraduate level students enrolled in CS, ECE, and EE programs.

Learning Opportunities:

Expected Team Size: *This project is related to ongoing research activity at QCRI involving several researchers with expertise in this field.*

Mentors

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