Project Proposal

Topic: Opinion spam detection

Team:
Mudit Mehrotra mmehrotra@cs.stonybrook.edu
Rajendra Kumar Raghupatruni rraghupatrun@cs.stonybrook.edu

Algorithm: We intend to use FraudEagle framework for improved opinion spam detection.

Objectives: To extend the algorithm by considering the below metrics to calculate the fraud score.

- Helpfulness of a review (from Amazon).
- Behavioral aspects. e.g user may just give rating but not provide review text (seen in google play store apps)
- Identifying reviews that have been marked helpful by spammers to increase review's helpfulness.
- Identifying irrelevant reviews (discussions on something other than the product, advertisements) which don't talk about the product.
- Giving more credibility to “verified purchase” tag given by Amazon. This can be used for goodness calculation. At what probability can this be genuine is unclear as of now.

i. These metrics can be used as priors (prior beliefs of users and products).
ii. The message passing (used for score calculation) can be influenced by using these metrics and this may improve the correctness of the algorithm.

Kickstart: We are not sure whether we can include the below items while computing the scores (good/bad, real/fake, honest/fraud). So, we have started feasibility analysis to identify which factors to include.

- Helpfulness validation for Amazon reviews.
- Goodness evaluation by using verified purchase tag from Amazon.

Test plan:

- User agreement study
- Comparing results with those obtained from existing frameworks (FraudEagle, wvRC, HITS)

Dataset: Currently we are referring to Yelp (some Amazon reviews as well for crawling).

References:

Akoglu, L., Chandy, R. and Faloutsos, Christos. 2013. Opinion fraud detection in online reviews by network effects. In *ICWSM*