Trust Metrics and User Recommendation in Social Networks

Alberto Lumbreras
Ricard Gavalda

2nd Graph-TA Workshop, February 21st, 2014
Goal of the thesis

Recommend *tweets* to users based on their social network

- Can “trust” improve tweet *recommendations*?
- Studying the concept of *trust* in Twitter
Contributions

- Recommender system prototype
- Trust metric (for social networks)
- Trust-aware crawler (for social networks)
- Analysis of trust properties in Twitter
Architecture

Diagram showing the architecture of a system with components such as CRAWLER, SEED, TOP TRUSTED, TOP TRUSTED OF TRUSTED, and RECOMMENDER. The diagram includes arrows indicating the flow of data or processes between these components.
Computing Trust

Underlying question: What is trust?

Direct trust computation:
- Explicit or implicit (user behavior and interaction)
- In Twitter: retweets, follows, mentions, favorites, ...

Trust propagation:
- Algorithms fit network properties (decay, trust horizon, ...)
- Network as Markov Chain
- PageRank, EigenTrust, Tidal Trust, ...

Trust-aware recommendations:
- Trust + Collaborative Filtering
- Trust + Content Based Filtering
Transitivity?

- No evidence of transitivity
- But people tend to agree on *ranking of common neighbors*
- And trust *does help* in improving recommendation
More information

- I'm around all day

- Slides, paper, thesis in
  http://albertolumbreras.net/publications/