We analyze trust using the SRL tool engines, viral marketing, reputation management. Modeling trust benefits many applications: recommendation, trust analysis.

MAP inference is a continuous probability distribution over truth values: weight learning via voted perceptron maximum likelihood.

Probabilistic Soft Logic

PSL trust models

We model trust with logical models inspired by ideas from social science.

We analyze trust using the SRL tool Probabilistic Soft Logic

FilmTrust Experiment

Data description and experiment setup

FilmTrust: social movie recommendation service

Records users’ trust scores for other users (1 to 10), users’ ratings for movies (1 to 5)

500 users in largest connected component, 1574 user-user trust ratings

Four-fold cross validation for learning weights and parameters

Discussion

PSL is a flexible tool for exploring social trust analysis

Soft first-order logic is convenient and effective for modeling the amount of trust between individuals

Future work: latent trust for social sentiment, larger-scale models of group trust and joint group membership

Average scores of trust predictions

Method | MAE |  | ρ
--- | --- | --- | ---
PPL-Triadic | 0.2985 | 0.0717 | 0.0944
PPL-Personality | 0.2366 | 0.1681 | 0.2265
PPL-Similarity | 0.2198 | 0.1089 | 0.1533
PPL-Triadic | 0.2509 | 0.1801 | 0.2417
PPL-TriadicSim | 0.2146 | 0.1197 | 0.1688
PPL-Similarity | 0.2044 | 0.1771 | 0.1644
PPL-TriadicSim | 0.2246 | 0.1907 | 0.2598
sameTraits | 0.2461 | 0.0531 | 0.0739
sameScore | 0.3751 | 0.0120 | 0.0167
Avg-Incoming | 0.3327 | 0.1088 | 0.1463
Avg-Outgoing | 0.2086 | - | -
EgenGlobal | 0.6729 | -0.0229 | -0.0291
TidalTrust | 0.2387 | 0.0478 | 0.0649

(MAE: average error, ρ: Kendall-tau, ρ: Spearman’s rank correlation)