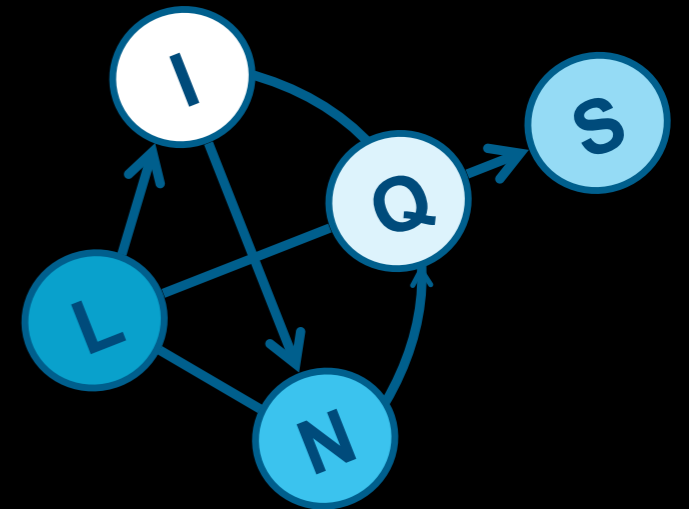
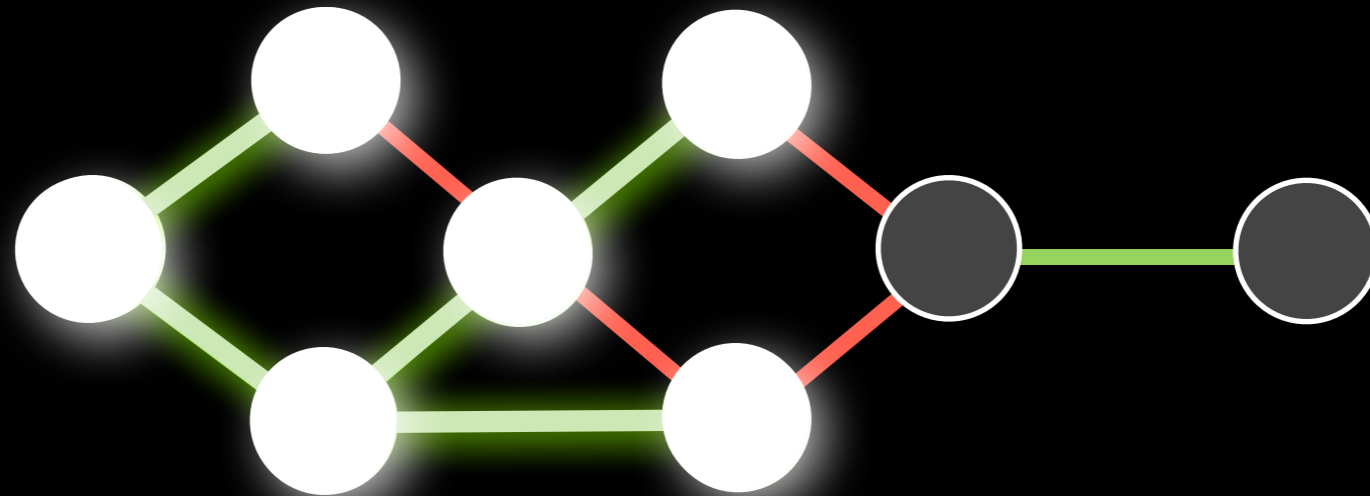


Probabilistic Soft Logic for Trust Analysis in Social Networks

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Trust Analysis



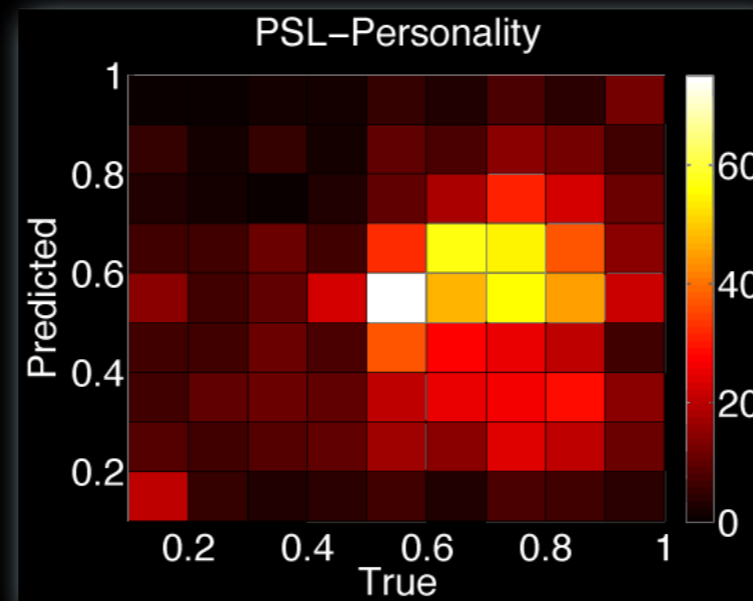
- Trust is a critical aspect of human social networks
- Trust models are useful in reputation management, recommendation, viral marketing, etc.
- Many methods for computing trust prediction
 - EigenTrust, TidalTrust, Advogato, etc.

Trust with Probabilistic Soft Logic

- Various SRL systems model with languages such as **first-order logic**
- Convenient for capturing intuitive ideas
- PSL uses **soft logic**, which easily encodes **strength** of trust
- Example PSL rules:
//Triadic closure
 $\text{Trusts}(A,B) \wedge \text{Trusts}(B,C) \Rightarrow \text{Trusts}(A,C)$

//Trustworthiness
 $\text{Trusting}(A) \wedge \text{Trustworthy}(B) \Rightarrow \text{Trusts}(A,B)$

FilmTrust Experiment



Method	MAE	τ	ρ
PSL-Triadic	0.2985	0.0717	0.0944
PSL-Personality	0.2586	0.1681	0.2265
PSL-Similarity	0.2198	0.1089	0.1539
PSL-TriadPersSim	0.2246	0.1907	0.2598
EigenTrust	0.6729	-0.0229	-0.0291
TidalTrust	0.2387	0.0478	0.0649

More models & results at our poster