

## Chapter 5.15

# A Study of Friendship Networks and Blogosphere

**Nitin Agarwal**

*Arizona State University, USA*

**Huan Liu**

*Arizona State University, USA*

**Jianping Zhang**

*MITRE Corporation, USA*

### ABSTRACT

In Golbeck and Hendler (2006), authors consider those social friendship networking sites where users explicitly provide trust ratings to other members. However, for large social friendship networks it is infeasible to assign trust ratings to each and every member so they propose an inferring mechanism which would assign binary trust ratings (trustworthy/non-trustworthy) to those who have not been assigned one. They demonstrate the use of these trust values in e-mail filtering application domain and report encouraging results. Authors also assume three crucial properties of trust for their approach to work: transitivity, asymmetry, and personalization. These trust scores are often transitive, meaning, if Alice trusts Bob and Bob trusts Charles then Alice can trust Charles.

Asymmetry says that for two people involved in a relationship, trust is not necessarily identical in both directions. This is contrary to what was proposed in Yu and Singh (2003). They assume symmetric trust values in the social friendship network. Social networks allow us to share experiences, thoughts, opinions, and ideas. Members of these networks, in return experience a sense of community, a feeling of belonging, a bonding that members matter to one another and their needs will be met through being together. Individuals expand their social networks, convene groups of like-minded individuals and nurture discussions. In recent years, computers and the World Wide Web technologies have pushed social networks to a whole new level. It has made possible for individuals to connect with each other beyond geographical barriers in a “flat” world. The wide-

spread awareness and pervasive usability of the social networks can be partially attributed to Web 2.0. Representative interaction Web services of social networks are social friendship networks, the blogosphere, social and collaborative annotation (aka “folksonomies”), and media sharing. In this work, we briefly introduce each of these with focus on social friendship networks and the blogosphere. We analyze and compare their varied characteristics, research issues, state-of-the-art approaches, and challenges these social networking services have posed in community formation, evolution and dynamics, emerging reputable experts and influential members of the community, information diffusion in social networks, community clustering into meaningful groups, collaboration recommendation, mining “collective wisdom” or “open source intelligence” from the exorbitantly available user-generated contents. We present a comparative study and put forth subtle yet essential differences of research in friendship networks and Blogosphere, and shed light on their potential research directions and on cross-pollination of the two fertile domains of ever expanding social networks on the Web.

## INTRODUCTION

For many years psychologists, anthropologists and behavioral scientists have studied the societal capabilities of humans. They present several studies and results that substantiate the fact that humans like engaging themselves in complex social relationships and admire being a part of social groups. People form communities and groups for the same reasons to quench the thirst for social interaction. Often these groups have like minded members or people with similar interests who discuss various issues including politics, economics, technology, life style, entertainment and what not. These discussions could be between two members of the group or involve several members.

These social interactions also led researchers to hypothesize “Small World Phenomenon” (also known as “Small World Effect”) which states that everyone in this world can be contacted via a short chain of social acquaintances. A renowned experiment conducted by psychologist Stanley Milgram in 1967 to find the length of this short chain resulted in the discovery of very interesting observations. This finding gave rise to the famous concept, “six degrees of separation”<sup>1</sup>. Milgram asked his subjects to send mails through US Post and keep passing them until they reached the destination. A more recent experiment conducted in 2001 by Duncan Watts, a professor at Columbia University also concluded with similar results although on a worldwide scale including 157 countries using e-mails and internet as the medium for message passing. This “connectedness” aspect of social interactions between people have fascinated several researchers and results have been applied to fields as varied as genealogy studies.

Several sociologists have pointed out subtle differences between society and community, community being a more cohesive entity that promotes a sense of security and freedom among its members. With continued communication, members develop emotional bonds, intellectual pathways, enhanced linguistic abilities, critical thinking and a knack for problem solving. Researchers in the field of psycho-analysis have studied how these interactions within a community proceed and how a group evolves over time. This line of research deals more with the group dynamics and social behavior of communities as a whole with respect to each individual. Several anthropologists are also interested in groups that are bound by cultural ties and try to study their differences from traditional groups in aspects like, communication styles, evolution patterns, participation and involvement, etc.

For the past 15 years Computers and Internet have revolutionized the way people communicate. Internet has made possible for people to connect with each other beyond all geographical

21 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:  
[www.igi-global.com/chapter/study-friendship-networks-blogsphere/8849](http://www.igi-global.com/chapter/study-friendship-networks-blogsphere/8849)

## Related Content

---

### Neural Network-Based Prediction Model for Sites' Overhead in Commercial Projects

Ali Hassan Zeinhom Hassan, Amira M. Idrees and Ahmed I. B. Elseddawy (2023). *International Journal of e-Collaboration* (pp. 1-24).

[www.irma-international.org/article/neural-network-based-prediction-model-for-sites-overhead-in-commercial-projects/318143](http://www.irma-international.org/article/neural-network-based-prediction-model-for-sites-overhead-in-commercial-projects/318143)

### Using the Web for Contract Negotiations

Ben Martz and Susan Gardner (2008). *Encyclopedia of E-Collaboration* (pp. 686-692).

[www.irma-international.org/chapter/using-web-contract-negotiations/12499](http://www.irma-international.org/chapter/using-web-contract-negotiations/12499)

### Research on an Interactive Question Answering System of Artificial Intelligence Customer Service Based on Word2Vec

Jiong Zhang, ChunGuang Zheng, Jing Yang and Mohammad Usama (2022). *International Journal of e-Collaboration* (pp. 1-12).

[www.irma-international.org/article/research-on-an-interactive-question-answering-system-of-artificial-intelligence-customer-service-based-on-word2vec/304040](http://www.irma-international.org/article/research-on-an-interactive-question-answering-system-of-artificial-intelligence-customer-service-based-on-word2vec/304040)

### Collaborative Performance: Addressing the ROI of Collaboration

Kjetil Kristensen and Björn Kijl (2012). *Advancing Collaborative Knowledge Environments: New Trends in E-Collaboration* (pp. 40-52).

[www.irma-international.org/chapter/collaborative-performance-addressing-roi-collaboration/61184](http://www.irma-international.org/chapter/collaborative-performance-addressing-roi-collaboration/61184)

### Impact of Activities in the Virtual Environment

Michelle W.L. Fong (2004). *E-Collaborations and Virtual Organizations* (pp. 206-230).

[www.irma-international.org/chapter/impact-activities-virtual-environment/8902](http://www.irma-international.org/chapter/impact-activities-virtual-environment/8902)