2010 International Conference on Advances in Social Networks Analysis and Mining

(ASONAM 2010)

Odense, Denmark
9 – 11 August 2010

Editors:

Nasrullah Memon
Reda Alhajj

IEEE Catalog Number: CFP1034H-PRT
ISBN: 978-1-4244-7787-6
Message from the ASONAM 2010 and OSINT-WM 2010 Program Chairs.................................................................xii
Message from the General Chair of ASONAM 2010.............................................................................xiv
Message from the General Chairs of OSINT-WM 2010 ............................................................................xv
Conference Sponsors..............................................................................................................................xvi
OSINT-WM 2010 Symposium Sponsors..............................................................................................xvii
ASONAM 2010 Conference Committee ......................................................................................xviii
ASONAM 2010 Program Committee ..........................................................................................xix
External Reviewers..........................................................................................................................xxiii
OSINT-WM 2010 Committee Members..........................................................................................xxiv
MSN-DS 2010 Workshop Committee Members........................................................................xxv
ASONAM 2010 and OSINT-WM 2010 Invited Keynotes ................................................................xxvi
ASONAM 2010 and OSINT-WM 2010 Invited Talks........................................................................xxx
OSINT-WM Inaugural Talk ..................................................................................................................xxxii

ASONAM 2010 Full Papers

Applications of Social Networks

A Social Network Analysis and Mining Methodology for the Monitoring of Specific Domains in the Blogosphere .................................................................1
Darko Obradović, Stephan Baumann, and Andreas Dengel

Learning from the Past: An Analysis of Person Name Corrections in DBLP Collection and Social Network Properties of Affected Entities .................................................................9
Florian Reitz and Oliver Hoffmann

The Structure of the Computer Science Knowledge Network ............................................................17
Manh Cuong Pham and Ralf Klamma
Business-Oriented Analysis of a Social Network of University Students: Informative Value of Individual and Relational Data Compared through Group Detection

Vincent Labatut and Jean-Michel Balasque

Privacy and Security
A Framework for Improved Adolescent and Child Safety in MMOs

Lydia Peima, Andrew Clark, and George Mohay

Social Aspects
Empirical Study of Social Features’ Roles in Buyers’ Complex Decision Making

Li Chen

Detecting Social Positions Using Simulation

Joel Brynielsson, Johanna Högberg, Lisa Kaati, Christian Mårtenson, and Pontus Svenson

What Can the Temporal Social Behavior Tell Us? An Estimation of Vertex-Betweenness Using Dynamic Social Information

Jing-Kai Lou, Shou-de Lin, Kuan-Ta Chen, and Chin-Laung Lei

Leveraging Contextual Information to Explore Posting and Linking Behaviors of Bloggers

Sofus A. Macskassy

White’s Three Disciplines and Relative Valuation Order: Countering the Social Ignorance of Automated Data Collection and Analysis

Steven McDermott

Algorithms for Social Networks
Incremental Detection of Local Community Structure

L. Karl Branning

Application of Genetic Algorithms to the Identification of Website Link Structure

M.R. Martinez Torres, B. Palacios, S.L. Toral, and F. Barrero

Iterative Annotation of Multi-relational Social Networks

Stéphane Peters, Ludovic Denoyer, and Patrick Gallinari

Fast Discovery of Reliable Subnetworks

Petteri Hintsanen, Hannu Toivonen, and Petteri Sevon

Detecting Highly Overlapping Communities with Model-Based Overlapping Seed Expansion

Aaron McDaid and Neil Hurley
Detecting Various Aspects in Social Networks

Profiling Phishing Emails Based on Hyperlink Information .................................................. 120
  John Yearwood, Musa Mammadov, and Arunava Banerjee
Assessing Expertise Awareness in Resolution Networks ......................................................... 128
  Yi Chen, Shu Tao, Xifeng Yan, Nikos Anerousis, and Qihong Shao
Faving Reciprocity in Content Sharing Communities: A Comparative Analysis of Flickr and Twitter ........................................................................................................................................... 136
  Jong Gun Lee, Panayotis Antoniadis, and Kavé Salamatian
Identifying Networks of Semantically-Similar Individuals from Public Discussion Forums ................................................. 144
  James A. Danowski

Recommendation and Prediction

A Unified Framework for Link Recommendation Using Random Walks ......................................... 152
  Zhijun Yin, Manish Gupta, Tim Weninger, and Jiawei Han
Optimizing Multiple Centrality Computations for Reputation Systems ......................................... 160
  Christian von der Weth, Klemens Böhm, and Christian Hüttter
A Study on Social Network Metrics and Their Application in Trust Networks .................................. 168
  Iraklis Varlamis, Magdalini Eirinaki, and Malamati Louta

Models for Social Networks

Tracking the Evolution of Communities in Dynamic Social Networks ............................................ 176
  Derek Greene, Dónal Doyle, and Pádraig Cunningham
Rhythm and Randomness in Human Contact ..................................................................................... 184
  Mervyn P. Freeman, Nicholas W. Watkins, Eiko Yoneki, and Jon Crowcroft
Semi-Supervised Classification of Network Data Using Very Few Labels ........................................ 192
  Frank Lin and William W. Cohen
How to Forget the Second Side of the Story: A New Method for the One-Mode Projection of Bipartite Graphs ................................................................................................................................. 200
  Katharina A. Zweig

Social Network Analysis

Product Adoption Networks and Their Growth in a Large Mobile Phone Network ................................ 208
  Pål Roe Sundsoy, Johannes Bjelland, Geoffrey Camright, Kenth Enga-Monsen, and Rich Ling
Labeling Communities Using Structural Properties ......................................................................... 217
  M. Saravanan, G. Prasad, Karishma Surana, and D. Suganthi
Measuring Link Importance in Terrorist Networks ............................................................................. 225
  Uffe Kock Wiil, Jolanta Gniadek, and Nasrullah Memon
Representation, Visualization, and Interaction

Pixel-Oriented Visualization of Change in Social Networks .......................................................... 233
Klaus Stein, René Wegener, and Christoph Schlieder

Using Vector Clocks to Visualize Communication Flow ................................................................. 241
Martin Harrigan

COSI: Cloud Oriented Subgraph Identification in Massive Social Networks ............................... 248
Matthias Bröcheler, Andrea Pugliese, and V.S. Subrahmanian

Clustering

A Multiobjective and Evolutionary Clustering Method for Dynamic Networks ......................... 256
Francesco Folino and Clara Pizzuti

ASONAM 2010 Short Papers

Privacy and Security

A New Approach to Manage Security against Neighborhood Attacks in Social Networks .......... 264
B.K. Tripathy and G.K. Panda

Social Aspects

Malik Muhammad Saad Missen, Mohand Boughanem, and Guillaume Cabanac

Analyzing the Blogosphere for Predicting the Success of Music and Movie Products ...................... 276
Fabian Abel, Ernesto Diaz-Aviles, Nicola Heme, Daniel Krause, and Patrick Siehndel

Detecting Leaders in Behavioral Networks .................................................................................. 281
Ilham Esslimani, Armelle Brun, and Anne Boyer

Algorithms for Social Networks

Efficient Extraction of High-Betweenness Vertices ....................................................................... 286
Wen Haw Chong, Wei Shan Belinda Toh, and Loo Nin Teow

Detecting Communities in Massive Networks Based on Local Community Attractive Force Optimization ................................................................. 291
Qi Ye, Bin Wu, Yuan Gao, and Bai Wang

Detecting Various Aspects in Social Networks

Information Propagation Analysis in a Social Network Site ......................................................... 296
Matteo Magnani, Danilo Montesi, and Luca Rossi

The Effect of Network Realism on Community Detection Algorithms ...................................... 301
Günce K. Orman and Vincent Labatut
Recommendation and Prediction

Mining Interaction Behaviors for Email Reply Order Prediction ...........................................306
   Byung-Won On, Ee-Peng Lim, Jing Jiang, Amruta Purandare, and Loo-Nin Teow

Crumblr: Aggregation and Sharing of Spatial Content in Mobile Environments .........................311
   Dragan Šunjka, Darko Ohradović, and Andreas Dengel

Dynamic Features of Social Tagging Vocabulary: Delicious, Flickr and YouTube ............................................................316
   Daifeng Li, Ying Ding, Zheng Qin, Stasa Milojević, Bing He, Erjia Yan, and Tianxi Dong

A Movie Rating Prediction Algorithm with Collaborative Filtering ........................................321
   O. Bora Fikir, İker O. Yaz, and Tansel Özyer

Supervised Machine Learning Applied to Link Prediction in Bipartite Social Networks ..................326
   Nesserine Benchettara, Rushed Kanawati, and Céline Rouveïrol

Models for Social Networks

Virus Propagation Modeling in Facebook ..................................................................................331
   W. Fan and K.H. Yeung

Enriching and Simplifying Communication by Social Prioritization ........................................336
   Juwel Rana, Johan Kristiansson, and Kare Synnes

An Analysis of Communities in Different Types of Online Forums .........................................341
   Mikolaj Morzy

Social Network Analysis

Online Social Network Popularity Evolution: An Additive Mixture Model ............................346
   Thomas Couronne, Alina Stoica, and Jean-Samuel Beuscart

Community Aware Personalized Web Search ........................................................................351
   Omair Shaфиq, Reda Alhajj, and Jon G. Rokne

Data Mining and Identification

Key Player Identification: A Note on Weighted Connectivity Games and the Shapley Value .....................................................356
   Roy Lindelauf and Iris Blankers

Quest: An Adaptive Framework for User Profile Acquisition from Social Communities of Interest ..................................................................................360
   Nima Dokoohaki and Mihhail Matskin

Subjective Document Classification Using Network Analysis ..............................................365
   Minkyoung Kim, Byoung-Tak Zhang, and June-Sup Lee
Representation, Visualization, and Interaction

Visualizing the Evolution of Users' Profiles from Online Social Networks ...........................................370
  Dieudonné Tchuente, Marie-Françoise Canut, Nadine Baptiste Jessel, André Pépinou,
  and Anass El Haddadi

Clustering

Overlapping Community Detection by Collective Friendship Group Inference .........................................375
  Bradley S. Rees and Keith B. Gallagher

Clustering Social Networks Using Distance-Preserving Subgraphs ......................................................380
  Ronald Nussbaum, Abdol-Hossein Esfahanian, and Pang-Ning Tan

Web Clustering Using Social Bookmarking Data with Dimension Reduction Regarding Similarity .............386
  Hidekazu Yanagimoto, Michifumi Yoshioka, and Sigeru Omatsu

Posters

An Empirical Analysis on Social Capital and Enterprise 2.0 Participation in a Research Institute ..............391
  Michela Ferron, Marco Frassoni, Paolo Massa, Maurizio Napolitano, and Davide Setti

Community Comparison in Communication Networks .................................................................................393
  Belkacem Serrou and Hamamahe Kheddouci

Hierarchy in Germany’s Corporate Network ..............................................................................................395
  Mishael Milaković, Matthias Raddant, and Laura Birg

A Multidisciplinary Model of Dynamic and Semantic Social Networks Analysis for Institutions ..............397
  Christophe Thovex and Francky Trichet

Comparison of Feature-Based Criminal Network Detection Models with k-Core and n-Clique .................400
  Fatih Ozgul, Zeki Erdem, Chris Bowerman, and Claus Atzenbeck

Designing, Analyzing and Exploiting Stake-Based Social Networks .......................................................402
  Tsung-Ting Kuo, Jung-Jung Yeh, Chia-Jen Lin, and Shou-De Lin

Mining Potential Partnership through Opportunity Discovery in Research Networks ................................404
  Alessandro Cucchiarelli and Fulvio D’Antonio

Augmenting Rapid Clustering Method for Social Network Analysis .......................................................407

Linking Collaborative Filtering and Social Networks: Who Are My Mentors? ......................................409
  Armelle Brun and Anne Boyer

Finding Patterns of Students’ Behavior in Synthetic Social Networks ....................................................411
  Gamila Obadi, Pavla Dráždilová, Jan Martinovič, Kateřina Slaminová, and Václav Snášel
Social Network Analysis of Iran’s Green Movement Opposition Groups Using Twitter .................................................................414

Kaveh Ketabchi Khonsari, Zahra Amin Nayeri, Ali Fathalian, and Leila Fathalian

Open Source INTElligence and Web Mining 2010 Symposium

Text-Based Web Page Classification with Use of Visual Information ..................................................................................416

Vladimir Bartik

A Global Measure for Estimating the Degree of Organization of Terrorist Networks .................................................................421

Khaled Dawoud, Reda Alhajj, and Jon Rokne

A Case Study of Open Source and Public Participation in Catalyzing Social Innovations .....................................................428

Helen K. Liu and Jodi Sandfort

Monitoring the Web Sentiment, The Italian Prime Minister’s Case ..................................................................................432

Federico Neri, Paolo Geraci, and Furio Camillo

Detecting New Trends in Terrorist Networks ..................................................................................................................435

Uffe Kock Wiil, Nasrullah Memon, and Panagiotis Karampelas

MSN-DS 2010: Workshop on Mining Social Networks for Decision Support

Automatic Detection of Social Tag Spams Using a Text Mining Approach ........................................................................441

Hsin-Chang Yang and Chung-Hong Lee

Improving Marketing Response by Data Mining in Social Network ..................................................................................446

Jerzy Surma and Anna Furmanek

Identifying Themes in Social Media and Detecting Sentiments ..................................................................................452

Jayanta Kumar Pal and Abhisek Saha

A Hierarchical Algorithm for Clustering Extremist Web Pages ..................................................................................458

Xingqin Qi, Kyle Christensen, Robert Duval, Edgar Fuller, Arian Spahiu, Qin Wu, and Cun-Quan Zhang

A Dynamic and Task-Oriented Social Network Extraction System Based on Analyzing Personal Social Data ..................464

Kai-Yu Wang, I-Hsien Ting, Hui-Ju Wu, and Pei-Shan Chang

Author Index .................................................................................................................................................................470