

2011 IEEE Network Science Workshop

(NSW 2011)

**West Point, New York, USA
22 – 24 June 2011**



IEEE Catalog Number: CFP11NSA-PRT
ISBN: 978-1-4577-1049-0

TABLE OF CONTENTS

Information Delivery 1

Data-Driven Diffusion Modeling to Examine Deterrence	1
<i>Michael J. Lanham, Geoffrey P. Morgan, Kathleen M. Carley</i>	

Modeling and Calibrating Real World Interpersonal Networks	9
<i>Jürgen Pfeffer, Kathleen M. Carley</i>	

Analyzing Interaction Communication Networks in Enterprises and Identifying Hierarchies	17
<i>Yi Wang, Marios Iliofotou, Michalis Faloutsos, Bin Wu</i>	

Social Computational Networks 1

Noisy Naming Games, Partial Synchronization and Coarse-Graining in Social Networks	25
<i>Chjan C. Lim, Weituo Zhang</i>	

The Impact of Social Groups on the Capacity of Wireless Networks	30
<i>Bita Azimdoost, Hamid R. Sadjadpour, J.J. Garcia-Luna-Aceves</i>	

Using Network Analysis to Understand the Relation between Cuisine and Culture	38
<i>Dalwinderjeet Kaur Kular, Ronaldo Menezes, Eraldo Ribeiro</i>	

Networks and Infrastructure 1

A Nested Set Approach for Building Recursive XML Tree Structures from Relational Databases	46
<i>Frederick S. Brundick, Josh Dehlinger</i>	

Network Latency and Packet Delay Variation in Cyber-Physical Systems	51
<i>Janette Cardoso, Patricia Derler, John C. Eidson, Edward A. Lee</i>	

A Framework for Near Real-Time Event Characterization within the Internet	59
<i>Max Planck, Kristin Glass, Isis Lyman, Richard Colbaugh</i>	

Information Delivery 2

Resource-Constrained Signal Propagation Modeling for Tactical Mobile Ad Hoc Networks	67
<i>Steffen Reidt, Peter Ebinger, Arjan Kuijper, Stephen D. Wolthusen</i>	

Visualizing Graphs with Krylov Subspaces	75
<i>Alex Breuer</i>	

Modeling Network Technology Deployment Rates with Different Network Models	.....	82
<i>Yoo Chung</i>		

Social Computational Networks 2

Towards Supply Chain Excellence using Network Analysis	.....	90
<i>P. Alexander, H. Armstrong, I. McCulloh</i>		

Time Spring Layout for Visualization of Dynamic Social Networks	.....	98
<i>Elisha Peterson</i>		

Statistical Modeling of Relational Event Networks	.....	n/a
<i>Guy Filippelli, Josh Lospinoso</i>		

Networks and Infrastructure 2

On the Matter of Classifying Node Connections	.....	105
<i>Colin James Armstrong</i>		

Towards a Theory of Semantic Communication	.....	110
<i>Jie Bao, Prithwish Basu, Mike Dean, Craig Partridge, Ananthram Swami, Will Leland, James A. Hendler</i>		

Online Estimating the k Central Nodes of a Network	.....	118
<i>Yeon-Sup Lim, Daniel S. Menasché, Bruno Ribeiro, Don Towsley, Prithwish Basu</i>		

Information Delivery 3

Flowing Valued Information based on a Need to Share	.....	123
<i>Kevin Huggins, Frank Mabry, John James</i>		

Prognostics and Network Health Management for Image Transmission Over Wireless Telemedicine Systems	.....	128
<i>G.Y. Hong, A.C.M. Fong, Bernard Fong</i>		

Effectiveness of Information Retraction	.....	133
<i>Cindy Hui, Malik Magdon-Ismail, Mark Goldberg, William A. Wallace</i>		

Need to Share: Flowing Valued Information and Secure Networking	.....	138
<i>Justin T. Lanahan, Allen Latty, Rodravian Murray</i>		

Security and Trust

Threat Analysis Model of an Agent-Based Vulnerability Mitigation Mechanism using Bayesian Belief Networks	.....	144
<i>Ziyad S. Al-Salloum, Stephen D. Wolthusen</i>		

Using Meta-Networks to Identify Key Intervention Points in Nuclear WMD Development	.....	152
<i>W.H. Peiris, H. Armstrong, J. Venable</i>		

A Pattern Recognition Framework for the Prediction of Network Vulnerabilities 157
N. Léchevin, A.-L. Jousselme, P. Maupin

Semantic Network Analysis for Evidence Evaluation: The Threat Anticipation Initiative 162
*Robin Burk, Alan Chappell, Mark Davis, Michelle Gregory, Liam McGrath,
Cliff Joslyn, Michele Morara, Steve Rust*

Networks and Infrastructure 3

Generating Scale-Free Networks with Adjustable Clustering Coefficient via Random Walks 167
Carlos Herrera, Pedro J. Zufiria

Detecting Communities in Time-Evolving Proximity Networks 173
Saurav Pandit, Yang Yang, Vikas Kawadia, Sameet Sreenivasan, Nitesh V. Chawla

An Implicit Optimization Approach for Survivable Network Design 180
Richard Li-Yang Chen, Amy Cohn, Ali Pinar

Community Detection using a Neighborhood Strength Driven Label Propagation Algorithm 188
Jierui Xie, Boleslaw K. Szymanski