Azadeh Nematzadeh

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EDUCATION

PhD candidate, Complex Systems
School of Informatics and Computing, expected Decemeber 2014.

Master of Science, Information Security
Amirkabir University, 2008.
Thesis: A Calculus for Trust Management in Semantic Web

Bachelor of Science, Computer Engineering
Shahid Beheshti University, 2005.
Thesis: Ranking Document according to their Relevance with User Query

SELECTED PUBLICATIONS

Loureno, Anlia, Michael Conover, Andrew Wong, **Azadeh Nematzadeh**, Fengxia Pan, Hagit Shatkay, and Luis Rocha. "A linear classifier based on entity recognition tools and a statistical approach to method extraction in the protein-protein interaction literature." BMC bioinformatics 12, no. Suppl 8 (2011): S12.

Loureno, Anlia, Michael Conover, Andrew Wong, Fengxia Pan, Alaa Abi-Haidar, **Azadeh Nematzadeh**, Hagit Shatkay, and Luis M. Rocha. "Testing extensive use of NER tools in article classification and a statistical approach for method interaction extraction in the protein-protein interaction literature." (2010).

Nematzadeh, Azadeh, and L. Jean Camp. "Threat analysis of online health information system." In Proceedings of the 3rd International Conference on PErvasive Technologies Related to Assistive Environments, p. 31. ACM, 2010.

Nematzadeh, Azadeh, and Layla Pournajaf. "Privacy Concerns of Semantic Web." In Information Technology: New Generations, 2008. ITNG 2008. Fifth International Conference on, pp. 1272-1273. IEEE, 2008.

Jafarpour, Borna, **Azadeh Nematzadeh**, Vahid Kazempour, and Babak Sadeghian. "A Cheating Model for Cellular Automata-Based Secret Sharing Schemes." configurations 1 (2007): 0.

Nematzadeh, Azadeh, Vahid Kazempour, Pooya Jaferian, Pejman Salehi, and Ahmad Abdollahzadeh. "Modeling Architectural Access Control with UML 2.0." IPM, Tehran, Iran (2007).

Shamsfard, Mehrnoush, **Azadeh Nematzadeh**, and Sarah Motiee. "Orank: An ontology based system for ranking documents." International Journal of Computer Science 1, no. 3 (2006): 225-231.

PRESENTED POSTERS

Azadeh Nematzadeh and Norbert Chan(2012), "How Do Issue Frames Evolve in Political Discourse? A Computational Analysis of the Presence and Magnitude of Shifts Between Policy Frames". PolMeth XXIX. 29th Annual Summer Meeting Society for Political Methodology. July 18.21.

Azadeh Nematzadeh and Shirin Nilizadeh (2011), "Classification Approach toward Craigslist Scam Detection". Graduate cohort workshop, Boston.

Publication in Progress

Azadeh Nematzadeh and Omar Tzec Sosa, (submitted to DRS 2014), "Experince Design Framework for Securing Large Scale Information and Communication System".

Azadeh Nematzadeh, Emilio Ferrara, Alessandro Flammini, and Yong-Yeol Ahn, (submitted to prl DEC2013), "Optimal network clustering for information diffusion".

RECENT RESEARCH EXPERIENCE

Effect of network structure and early innovator fraction in Information diffusion:
I am working to answer the question: how do the topological and structural characteristics of a network affect information diffusion processes? I have been analyzing the information diffusion behaviors through agent based simulation and analytic approximation. In this project, I applied Linear Threshold Model to study effects of network structure in size of early innovator, total time to achieve global information diffusion and size of information diffusion. I analyzed information diffusion characteristic considering different network models such as random network, Watt-Stogatz Network, Barabasi network, and Newman-Girvan cluster network. Effects of other topological parameter such as network size and average degree have been studied as well.

Topical group formation:
I have been working to model the topical group formation in comparison to structural group formation, considering the importance of diffusion of information in group formation.

Measuring Agenda Change in Political Discourse:
The classification of political texts is prone to the problem of concept drift where the underlying properties of the target concept change over time. I develop a computational approach to detect and track temporal changes of (1) issue ownership and (2) issue frames. In the former application, I identify the critical words that come to characterize the policy focus of each political group at different time steps. In the latter application, I focus on the rate and pattern of frame turnover in the parliamentary discourse on controversial policy issues. I compiled and applied a diachronic corpus from the published chamber remarks of the National Assembly of France in the period 2003 to 2010.

Analyzing Temporal Changes on Twitter Communities:
The dynamics of a social network holds valuable information not immediately seen in the static structure of the network. Temporal analysis of such networks show the fluctuation in users behaviors. It reveals how a certain idea (in our case hashtags) becomes popular, how it spreads across the network, how users change their opinion and move from one group to another. I study temporal changes in patterns of users' collective behaviors on Twitter microblogging network. For two popular political hashtags (#tcot, and #p2), I analyze change in topological and statistical characteristics of their retweet network. I also analyze how the participation of users in the discussion about these hashtags and their interaction with others changes over the time.

RECENT WORK EXPERIENCE

Research Assistant, Under supervision of Luis Rocha, Instituto gulbenkian de science, Sept 2009-Sept 2010.

Research Assistant, Under supervision of Jean Camp, School of Informatics, Summer2009 and Fall 2010.

Research Assistant, Under supervision of Alessandro Flammini, Center for complex networks and systems research, Fall 2013.

Solution Engineer, Nokia Siemens Network, 2007-2008.
Provide an engineering solution for mobile network, System installation, integration and maintenance.

Software Engineer, Niro Research Institute, 2006 .
Work as a software analysis, designer and developer.

TEACHING EXPERIENCE

Associate Instructor
Information Representation, Spring 2011-Spring 2013,
Organizational Informatics of Security, Spring 2009,
Analytical Foundation of The Security, Fall 2009,
Artificial Intelligence, Spring 2004-Fall 2006,
Principles of Computer & Programming, Fall 2003.

Lecturer
Multimedia System, Spring 2007.

SKILLS

Experience in Python, R, C++, C#, VB.Net. ASP.Net, Bash screipt, HTML, PHP, Perl, LaTeX, MySQL, Prolog, UML.

Knowledge of OOP, RUP, Software Analysis and Design, Database Design, Machine Learning, Data Mining, Text Mining, Data Analysis, Statistical Learning, Security Analysis of the Systems, MapReduce.

AWARDS

Grad-Cohort award, Graduate cohort workshop, Boston, 2011.
NSF scholar award, doctoral consortium of PETRA conference. Greece, 2010.
WISE 2010, Summer school Sponsored by the Team for Research in Ubiquitous Secure Technology (TRUST), CMU, 2010.
WISE 2009, Summer school Sponsored by the Team for Research in Ubiquitous Secure Technology (TRUST), Berkley University, 2009.

VOLUNTEER WORKS

Openhatch workshop , Mentor, Sept. 2013.
Complex System PhD student meeting, member of the organizing committee, Indiana University, 2011-2012.
NCWIT Award , Review and score applications for the NCWIT Award for Aspirations in Computing, 2011.
IT group, One of the main organizer of IT group at Shahid Beheshti University, Activities of this group included presenting lectures about some different aspects of IT (Data Mining, Intelligent Agents, eCommerce, ITS),2002.