

HOSSEIN MOHAMMADHASSANZADEH

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RESEARCH INTEREST

My PhD research lies at the intersection of Artificial Intelligence, Knowledge Discovery, Logic, and the Semantic Web with a Healthcare application. To be specific, my research interest can be divided to main three areas:

- Plausible Reasoning, Semantic Analytics and Semantic Web Reasoning
- Clinical Decision Support Systems, Medical Knowledge Bases and Health Informatics
- Data Mining, Machine Learning and Natural Language Processing

EDUCATION

- **Doctor of Philosophy (PhD), Computer Science** Sep. 2013 – present (expected Dec. 2017)
Dalhousie University, Halifax, Canada
 - Dissertation: *“Investigating a Plausible Reasoning Approach for Performing Semantics based Data Analytics”*
 - Relevant Courses: *Knowledge Engineering, Management of Distributed Data*
- **Master of Science (MSc), Information Technology Engineering** 2010 – 2013
Amirkabir University of Technology (Polytechnic), Tehran, Iran
 - Dissertation: *“Context-based Trust Inference in Social Networks Using Data Mining Techniques”*
 - Relevant Courses: *Machine Learning, BI, Intelligent DSS, e-Commerce Systems, e-Payment Systems, Financial Management*
- **Bachelor of Science (BSc), Information Technology Engineering** 2005 – 2010
University of Isfahan, Isfahan, Iran
 - Senior Project: *“Development of an e-Auction website”*

PUBLICATIONS

- H. Mohammadhassanzadeh, S.R. Abidi, W. Van Woensel, S.S.R. Abidi. *“Investigating Plausible Reasoning over Knowledge Graphs for Semantics-based Health Data Analytics”*, Data Exploration in the Web 3.0 Age (DEW) conference track at 27th IEEE International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE'18), Paris, France, Jun. 27-29, 2018. (*accepted*)
- H. Mohammadhassanzadeh, S.R. Abidi, MS. Shah, M. Karamollahi, S.S.R. Abidi. *“SeDAN: a Plausible Reasoning Approach for Semantics-based Data Analytics in Healthcare”*, Workshop on Artificial Intelligence with Application in Health (WAIHA 2017), co-located with the AI*IA 2017, Bari, Italy, Nov. 14-17, 2017.
- H. Mohammadhassanzadeh, SA. Stewart, R. Traynor, S. Alexander, and IS. Sketris, *“Using Natural Language Processing to examine the media uptake of a study on isotretinoin safety”*, 33rd International Conference on Pharmacoepidemiology & Therapeutic Risk Management (ICPE'17), Montreal, Canada, Aug. 26 - 30, 2017.
- H. Mohammadhassanzadeh, W. Van Woensel, S.R. Abidi, and S.S.R. Abidi, *“Semantics-based plausible reasoning to extend the knowledge coverage of medical knowledge bases for improved clinical decision support”*, Journal of BioData Mining, Vol. 10. No. 1, 2017.
- H. Mohammadhassanzadeh, W. Van Woensel, S.R. Abidi, and S.S.R. Abidi, *“A Semantic Web-based Approach to Plausible Reasoning for Improving Clinical Knowledge Engineering”*, IEEE International Conference on Biomedical and Health Informatics, Las Vegas, USA, Feb. 24-27, 2016.
- W. Van Woensel, H. Mohammadhassanzadeh, S.R. Abidi, S.S.R. Abidi, *“Multi-Strategy Semantic Web Reasoning for Medical Knowledge Bases”*, Proc. of Int. Workshop on Biomedical Data Mining, Modeling, and Semantic Integration (BDM2I) - co-located with the 14th International Semantic Web Conference (ISWC 2015), Bethlehem, USA, October 11, 2015.
- H. Mohammadhassanzadeh, H.R. Shahriari. *“Prediction of User's Trustworthiness in Social Networks via Text Mining”*, The ISC International Journal of Information Security, Vol. 5, Issue 2, 2014.
- M. Farahikia, H. Mohammadhassanzadeh, *“Application of Fuzzy Logistic Regression in Forecasting Stock Market Index”*, 3rd Conference on Financial Mathematics, Semnan, 2013.
- H. Mohammadhassanzadeh, M. Farahikia, A. Esfahanipour, *“An Empirical Study of Predictability of Stock Index Movement in Tehran Stock Exchange with Machine Learning Techniques”*, 9th International Industrial Engineering Conference, Iran, 2013
- H. Mohammadhassanzadeh, H.R. Shahriari, *“Using User Similarity to Infer Trust Values in Social Networks Regardless of Direct Ratings”*, 9th International ISC Conference on Information Security and Cryptology (ISCISC '12), Tabriz, 2012.

TEACHING EXPERIENCE

- **Instructor** Dec. 2012 – Aug. 2013
 Computer Engineering Department, Abrar University, Tehran, Iran
 - Information Security
- **Teaching Assistant**
 - Rowe School of Business, Dalhousie University, Halifax, Canada Fall 2016 & Fall 2017
 - Core Business Applications: Introduction to Computers
 - Faculty of Computer Science, Dalhousie University, Halifax, Canada Fall 2016, Winter 2016 & Fall 2017
 - Introduction to Experimental Robotics, Introduction to Web Site Creation
 - Faculty of Computer Engineering and IT, Amirkabir University of Technology, Tehran, Iran 2011 – 2012
 - Information Security; e-Commerce Systems Engineering

ACADEMIC SERVICES, AWARDS, AND LEADERSHIPS

- **(Sub)Reviewer**
 - The 8th International Learning Analytics and Knowledge (LAK) Conference 2018
 - International Journal on Semantic Web and Information Systems (IJSWIS) 2017
 - The 22nd National CSI Computer Conference (CSICC) 2017
 - The 7th International Learning Analytics and Knowledge (LAK) Conference 2017
 - The 6th International Learning Analytics and Knowledge (LAK) Conference 2016
- **Awards**
 - **Nova Scotia Research and Innovation Graduate Scholarship**, Dalhousie University, Canada 2017 – 2018
 - **Post-graduate full scholarship** for PhD studies, Dalhousie University, Canada 2013 – 2017
 - **Partial thesis support scholarship** for master's studies, Research Inst. for Inf. and Com. Tech. (ITRC), Iran 2010-11
- **Academic Services**
 - **CNODES (Canadian Network for Observational Drug Effect Studies) Atlantic Node Trainee** Jun. 2016 – present
 - **Grants Committee Member**, Dalhousie Computer Science Graduate Society (CSGS) Nov. 2016-present
 - **Treasurer**, Dalhousie Computer Science Graduate Society (CSGS) Apr. 2016 – Nov. 2016
 - **Member at large**, Dalhousie Computer Science Graduate Society (CSGS) Jun. 2014 – Apr. 2016
 - **DCSI'15 Conference Organizing Committee Member**, Dalhousie University Sept. 2015
 - **Scientific Society of IT Engineering Member**, University of Isfahan 2007 – 2009

PRESENTATIONS

- H. Mohammadhassanzadeh, "Investigating a Plausible Reasoning Approach for Performing Semantics-based Health Data Analytics", Doctoral Consortium at 16th International Conference of the Italian Association for Artificial Intelligence (AI*IA 2017), November 14-17, 2017, Bari, Italy
- H. Mohammadhassanzadeh, S. Alexander, SA. Stewart, B. Winqvist, R. Traynor, IS. Sketris, "Using Natural Language Processing to examine the media uptake of a study on isotretinoin safety", The 19th Annual College of Pharmacy Research Event, Dalhousie University, October 14, 2017
- H. Mohammadhassanzadeh, SA. Stewart, R. Traynor, S. Alexander, IS. Sketris. "Using Natural Language Processing to examine the uptake, content, and readability of media related to an observational research study on isotretinoin safety", College of Pharmacy, Dalhousie University, June 14, 2017
- H. Mohammadhassanzadeh, S.S.R. Abidi. "Investigating a Plausible Reasoning Approach for Performing Semantics based Data Analytics", Dalhousie Computer Science Inhouse Conference (DCSI 2016), Dalhousie University, NS, Canada, Sep. 28-30, 2016
- H. Mohammadhassanzadeh and S.S.R. Abidi, "A Semantic Web-based Approach to Plausible Reasoning for Improving Clinical Knowledge Engineering", The 6th Atlantic Workshop on Semantics and Services (AWoSS 2015), University of New Brunswick, NB, Canada, December 9, 2015
- H. Mohammadhassanzadeh, W. Van Woensel, S.R. Abidi, and S.S.R. Abidi, "A Semantic Web-based Approach to Plausible Reasoning for Improving Knowledge Engineering", Dalhousie Computer Science In-house Conference (DCSI 2015), Dalhousie University, NS, Canada, Sep. 30 - Oct. 2, 2015

SKILLS AND TECHNICAL PROFICIENCIES

- Imperative Languages: **Java, C#, C++, Python**
- Semantic Web: **RDF, RDFS, OWL ontologies (Protégé), SWRL, SPARQL, the SW Reasoning (Jena)**
- Logic Programming: **Prolog**
- Mining/Engineering Tools: **MATLAB, Weka, Rapidminer**

- Databases: **SQL Server, MySQL**
- Web Languages: **JavaScript, Asp.Net, php, html**
- Mobile Programming: **Android Studio, Sencha Touch**
- Source Code Management: **Microsoft TFS, GitHub, BitBucket**
- Software Eng./Project Mng. Tools: **Rational Rose, Microsoft Project**
- Microsoft Office, LaTeX

PROFESSIONAL EXPERIENCE

- **Researcher and Mobile Application Developer** Sep. 2013 – present
NICHE Research Group, Faculty of Computer Science, Dalhousie University
 - Conducting inter-disciplinary research on artificial intelligence and knowledge engineering
 - Investigating the application of plausible reasoning to infer new knowledge by using semantics relevant reasoning methods
 - Designing and developing a semantic analytics framework for intelligent extraction and synthesis of knowledge
 - Establishing a built-in support for reasoning with uncertainty and incompleteness in the logic layer of the Semantic Web
 - Developed cross-platform mobile application using Sencha and JavaScript ([IMPACT-AF](#) project)
- **Data Scientist** Jun. 2016 – present
College of Pharmacy, Dalhousie University
 - Studying how the media present pharmacoepidemiological research
 - Examining the media uptake of a CNODES' study on drug safety
 - Using Natural Language Processing (NLP) techniques
- **Data and IT Analyst** Feb. 2012 – Sep. 2013
COMPUCO Inter Swiss Affiliation Company, Tehran, Iran
 - Developed risk management system in banking industry including: credit risk, liquidity risk, currency/stock market risk
 - Developed business intelligence in banking industry including data gathering/cleaning/representation (BI Dashboard)
 - Provided and improved IT solutions for credit scoring system and data mining
 - Conducted research and provided advice regarding the development/implementation of data policies, standards, and models
- **Database Designer and Developer** Jul. 2010 - Apr. 2011
Shahlai Industrial Group, Tehran, Iran
 - Analyzed, designed, and developed industrial automation and ERP system
 - Developed a data management system on distributed data including backup/restore, data replication between office & plants