

## HOSSEIN MOHAMMADHASSANZADEH, PHD

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### HIGHLIGHTED SKILLS

- 7+ years of hands-on experience working with data, both in terms of data analytics and data management
- Data Mining and Machine Learning, particularly Natural Language Processing
- Semantic Analytics, Plausible Reasoning and Semantic Web Reasoning
- Decision Support and Recommender Systems with applications in Healthcare and Finance
- Experienced professional with a unique combination of technical, analytical and problem-solving skills
- Innovative and able to creatively apply knowledge to new domains, with strong attention to detail
- Capable of working in interdisciplinary environments
- Highly organized with strong interpersonal skills, and confident in building relationships with both co-workers and clients

### EDUCATION

- **Doctor of Philosophy (PhD), Computer Science** Sep. 2013 – Mar. 2019  
**Dalhousie University, Halifax, Canada**
  - Supervisor: Dr. Syed Sibte Raza Abidi
  - Dissertation: *“Plausible Reasoning over Knowledge Graphs: A Novel Approach for Semantics-Based Health 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**
  - Supervisor: Dr. Hamid Reza Shahriari
  - 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”*

### PROFESSIONAL EXPERIENCE

- **Research Scientist and Mobile Application Developer** Sep. 2013 – Mar. 2019  
**NICHE Research Group, Faculty of Computer Science, Dalhousie University**
  - Conducted inter-disciplinary research on artificial intelligence, data analytics and healthcare
  - Investigated the application of plausible reasoning to infer new knowledge from ontologies and big data
  - Designed a semantics-based reasoning engine for intelligent extraction and synthesis of knowledge
  - Developed a novel semantics-based data analytics framework deriving actionable insights from knowledge graphs
  - Developed a cross-platform mobile application using Sencha and JavaScript (**IMPACT-AF** project)
- **Data Scientist** Jun. 2016 – April 2018  
**College of Pharmacy, Dalhousie University**
  - Studied how the media present pharmacoepidemiological research
  - Examined the media uptake of a CNODES study on drug safety
  - Developed Natural Language Processing techniques over unstructured text corpus for document clustering analysis
  - Developed a framework for automatic analysis of other CNODES studies using MySQL and Python (NLTK, Sklearn, Scipy, etc.)
- **Data and IT Analyst** Feb. 2012 – Sep. 2013  
**COMPUCO Inter Swiss Affiliation Company, Tehran, Iran**
  - Developed data ETL and BI dashboard for the Iranian banking industry; data gathering, warehousing and visualization
  - Performed statistical analysis of financial data to develop a risk management system for banking industry
  - Provided and improved IT solutions for the operational challenges and management of big financial data
  - Conducted research and provided advice regarding the development/implementation of data policies, standards and models
  - Achieved extensive expertise in programming, database design and management, data analysis, and financial engineering
- **Database Designer and Developer** Jul. 2010 - Apr. 2011  
**Shahlai Industrial Group, Tehran, Iran**
  - Developed a data management system on distributed data including backup/restore, data replication between office & plants
  - Analyzed, designed, and developed industrial automation and ERP systems
  - Broadened proficiency in software development, including SQL Server, C#, and ADO.NET, and software design

## PUBLICATIONS

- H. Mohammadhassanzadeh, I. Sketris, R. Traynor, S. Alexander, B. Winqvist, S. Stewart, "Using Natural Language Processing to examine the uptake, content, and readability of media related to an observational research study on isotretinoin exposure and pregnancy", *Journal of Medical Internet Research (under review)*
- 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 (WETICE'18), Paris, France, June 2018.
- 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, S. Stewart, R. Traynor, S. Alexander, and I. 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**  
 Rowe School of Business, Dalhousie University, Halifax, Canada Fall 2018
  - Core Business Applications: Introduction to Computers
- **Computer Engineering Department, Abrar University, Tehran, Iran** Winter 2013 & Summer 2013
  - Information Security
- **Teaching Assistant and Marker**  
 Rowe School of Business, Dalhousie University, Halifax, Canada Fall 2016, Fall 2017 & Winter 2019
  - Core Business Applications: Introduction to Computers
- **Faculty of Computer Science, Dalhousie University, Halifax, Canada** Fall 2016, Winter 2016, Fall 2017 & Winter 2019
  - Introduction to Experimental Robotics, Introduction to Web Site Creation, Data Structures and Algorithms
- **Faculty of Computer Engineering and IT, Amirkabir University of Technology, Tehran, Iran** 2011 – 2012
  - Information Security; e-Commerce Systems Engineering

## SKILLS AND TECHNICAL PROFICIENCIES

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

## ACADEMIC SERVICES, AWARDS, AND LEADERSHIPS

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- **(Sub)Reviewer**
  - The 8<sup>th</sup> International Learning Analytics and Knowledge (LAK) Conference 2018
  - International Journal on Semantic Web and Information Systems (IJSWIS) 2017
  - The 22<sup>nd</sup> National CSI Computer Conference (CSICC) 2017
  - The 7<sup>th</sup> International Learning Analytics and Knowledge (LAK) Conference 2017
  - The 6<sup>th</sup> 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
- **Certifications**
  - **Allscripts Workshop and Code Challenge**, ShifKey Labs, Dalhousie University Jan. 2016
  - **Design Thinking Workshop Series**, ShifKey Labs, Dalhousie University Jul. 2015

## PRESENTATIONS

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- 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. Winquist, 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 (Poster)
- 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