

Adel Ardalan

Curriculum Vitæ

Department of Computer Sciences
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Education

- 2018 Ph.D. in Computer Sciences, University of Wisconsin-Madison.
(Expected) Dissertation Title: Large-Scale Information Extraction Using Rules, Machine Learning and Human Computation
- 2008 M.Sc. in Information Technology, University of Tehran, Iran.
Thesis Title: Bioinformatics Database Integration Using a Data Fusion Approach
- 2005 B.Sc. in Computer Software Engineering, University of Tehran, Iran.

Research Interests and Activities

- Human-in-the-loop data analytics and information extraction with applications in data cleaning and integration
 - Hybrid machine-human value normalization for data cleaning with accuracy guarantee
 - Highly scalable event extraction in the Twittersphere from legacy tweet stores
 - Slot filling for TAC/MR-KBP using logistic regressors
- Machine learning and mathematical modeling with applications in cognitive and neurosciences, computational systems biology, and bioinformatics
 - Empirical topology for analyzing the dynamics in complex systems
 - Hardware-software co-design for large-scale data analytics
 - Analysis of motor kinematics data for diagnosis and treatment of motor deficiencies in young adults with autism spectrum disorder (ASD)
 - Protein identification/quantification from (tandem) mass spectrometry data

Publications

- A. Ardalan, W. Cai, A. Doan and Y. Park. Value Normalization: Toward an RDBMS-Style Solution That Minimizes Human Time. *Under submission*.
- P. Suganthan G. C., A. Ardalan, A. Doan, A. Akella, Y. Park, G. Krishnan, R. Deep, V. Raghavendra. String Similarity Joins Using Random Forest Conditions. *Under submission*.
- D. Mahajan, J. K. Kim, J. Sacks, A. Ardalan, A. Kumar and H. Esmailzadeh. In-RDBMS Hardware Acceleration of Advanced Analytics. *Intl. Conf. on Very Large Data Bases*, 2018.
- A. Doan, P. Konda, P. Suganthan G. C., A. Ardalan, J. Ballard, S. Das, Y. Govind, H. Li, P. Martinkus, S. Mudgal, E. Paulson, H. Zhang. Toward a System Building Agenda for Data Integration (and Data Science). *IEEE Data Eng. Bull.*, 41(2):37-49, 2018.

- P. Konda, S. Das, P. Suganthan G. C., P. Martinkus, A. Doan, A. Ardalán, J. Ballard, Y. Govind, H. Li, F. Panahi, H. Zhang, J. Naughton, S. Prasad, G. Krishnan, R. Deep, and V. Raghavendra. Magellan: Toward Building Entity Matching Management Systems. *SIGMOD Record*, 2018.
- A. Doan, A. Ardalán, J. Ballard, S. Das, Y. Govind, P. Konda, H. Li, S. Mudgal, E. Paulson, P. Suganthan G. C., H. Zhang. Human-in-the-Loop Challenges for Entity Matching: A Midterm Report. *Workshop on Human-in-the-loop Data Analytics*, 2017.
- P. Konda, S. Das, P. Suganthan G. C., A. Doan, A. Ardalán, J. Ballard, H. Li, F. Panahi, H. Zhang, J. Naughton, S. Prasad, G. Krishnan, R. Deep, and V. Raghavendra. Magellan: Toward Building Entity Matching Management Systems. *Intl. Conf. on Very Large Data Bases*, 2016.
- P. Konda, S. Das, P. Suganthan G. C., A. Doan, A. Ardalán, J. Ballard, H. Li, F. Panahi, H. Zhang, J. Naughton, S. Prasad, G. Krishnan, R. Deep, and V. Raghavendra. Magellan: Toward Building Entity Matching Management Systems over Data Science Stacks. *Intl. Conf. on Very Large Data Bases*, (demo), 2016.
- X. Chai, O. Deshpande, N. Garera, A. Gattani, W. Lam, D. S. Lamba, L. Liu, M. Tiwari, M. Tourn, Z. Vacheri, S. Prasad, S. Subramaniam, V. Harinarayan, A. Rajaraman, A. Ardalán, S. Das, P. Suganthan G. C., and A. Doan. Social Media Analytics: The Kosmix Story. *IEEE Data Eng. Bull.*, 36(3):4-12, 2013.
- A. Sangari, A. Ardalán, L. Lambe, H. Eghbalian, and A. H. Assadi. Mathematical Analysis and Computational Integration of Massive Heterogeneous Data from the Human Retina. *Doctoral Conf. on Computing, Electrical and Industrial Systems*, 2012.
- A. Ardalán, E. S. Selen, H. T. Dashti, A. Talaat, and A. H. Assadi. Design and Applications of Intelligent Systems in Identifying Future Occurrence of Tuberculosis Infection in Population at Risk. *Doctoral Conf. on Computing, Electrical and Industrial Systems*, 2011.
- H. T. Dashti, A. Ardalán, A. F. Siahpirani, J. Tonejc, I. V. Uilecan, T. Simas, B. Miranda, R. A. Ribeiro, L. Wang, and A. H. Assadi. Pattern Recognition in Collective Cognitive Systems: Hybrid Human-Machine Learning (HHML) by Heterogeneous Ensembles. *Intl. Conf. on Artificial Intelligence*, 2010.
- H. T. Dashti, J. Tonejc, A. Ardalán, A. F. Siahpirani, S. Guettes, Z. Sharif, L. Wang, and A. H. Assadi. Applications of Machine Learning Methods to Quantifying Phenotypic Traits That Distinguish the Wild Type from the Mutant Arabidopsis Thaliana Seedlings During Root Gravitropism. *Intl. Conf. on Bioinformatics & Computational Biology*, 2010.
- A. Sabouri, A. Ardalán, and R. Shahidi-Nejad. Prediction of Protein Secondary Structure Based on NMR Chemical Shift Data using Support Vector Machines. *Intl. Conf. on Computer Modeling and Simulation*, 2010.
- M. Emadi, M. Rahgozar, A. Ardalán, A. Kazerani, and M. M. Arian. A Comparative Study of DTD-Independent XML Data Storage Approaches. In *Intl. CSI Computer Conf.*, 2006.
- M. Emadi, M. Rahgozar, A. Ardalán, A. Kazerani, and M. Ariyan. Storage Approaches for DTD-Independent XML Data. *Iranian Conf. on Electrical Engineering*, 2006.

- M. Emadi, M. Rahgozar, A. Ardalan, A. Kazerani, and M. M. Ariyan. Approaches and Schemes for Storing DTD-Independent XML Data in Relational Databases. *Trans. on Engineering, Computing and Technology*, 2006.

Work Experience

- 2017 Lecturer, Department of Computer Sciences, University of Wisconsin-Madison.
Database Management Systems: Design and Implementation (CS 564)
- 2012-2018 Research Assistant, Department of Computer Sciences, University of Wisconsin-Madison.
Supervisor: AnHai Doan
 - Large-scale human-in-the-loop information extraction and integration
 - Attribute value extraction from product titles in e-commerce catalogs
 - Event extraction in the Twittersphere from legacy tweet stores
- 2011 Research Assistant, Department of Mathematics, University of Wisconsin-Madison.
Supervisor: Amir H. Assadi
 - Systems biology of Mycobacterium Tuberculosis for preventive and personalized medicine
- 2011 Research Assistant, Department of Computer Sciences, University of Wisconsin-Madison.
Supervisor: Christopher Ré
 - Machine reading project, slot filling task, feature extraction using logistic regression
- 2014 Summer Intern, @WalmartLabs, Mountain View, CA.
 - Attribute value extraction from product titles in e-commerce catalogs, in collaboration with Product Classification and Segmentation (PCS) team
- 2018 Teaching Assistant, Department of Computer Sciences, University of Wisconsin-Madison.
Database Management Systems: Design and Implementation (CS 564)
- 2012 Teaching Assistant, Department of Computer Sciences, University of Wisconsin-Madison.
Introduction to Programming (CS 302)
- 2011-2012 Teaching Assistant, Department of Mathematics, University of Wisconsin-Madison.
Calculus I and II (Math 221 and Math 222)
- 2002-2009 Teaching Assistant, Department of Electrical and Computer Engineering, University of Tehran, Iran.
Fundamentals of Databases, Database Laboratory, Artificial Intelligence
- 2009 Analyst and Developer, Payamafzar Peykasa, Tehran, Iran.
Building a multimedia messaging system for real-time application based on 3GPP and OMA standards
- 2007 Consultant, Iranian Power Market, Tehran, Iran.
Data modeling and database design

Honors and Awards

- 2004 Award for academic excellence, ranked in top 3 student GPAs, class of 2000, Electrical and Computer Engineering Department, University of Tehran, Iran
- 2003 Award for academic excellence, ranked in top 3 student GPAs, class of 2000, Electrical and Computer Engineering Department, University of Tehran, Iran
- 2000 Ranked 67 out of approximately 140,000 students taking the Iranian university entrance exam (zone #2)

Professional Services

- 2017 External Reviewer, ACM SIGMOD/PODS International Conference on Management of Data (SIGMOD 2018).
- 2016 External Reviewer, 42nd International Conference on Very Large Data Bases (VLDB 2016).
- 2015 External Reviewer, The Journal of Supercomputing, Springer.
- 2013 External Reviewer, The Journal of Supercomputing, Springer.
- 2013 External Reviewer, Data Engineering Bulletin Special Issue on Social Media and Data Analysis, IEEE Computer Society.

Technical Skills

- Programming languages and modeling tools: Python, Java, C++, Cython, HTML, JavaScript, SQL, Matlab, Git
- Data science tools: Pandas, Scikit-learn, Numpy, Matplotlib, Dask
- Distributed processing frameworks: Hadoop, Amazon Web Services, Google Cloud Platform, Condor
- Web development frameworks: Django Framework, Play Framework, D3.js
- Database management systems: PostgreSQL, MySQL, Oracle, Microsoft SQL Server
- Operating systems: Linux, Windows, Mac OS

Personal Activities and Hobbies

- Music and Dance ◦ Iranian traditional music – play Daf (Persian frame drum), Tambur (ancient middle-eastern lute), and perform in various venues and concerts
- Argentine tango
- Reading ◦ Philosophy, sociology and semiotics (esp. works of R. Barthes)
- Literature, particularly Iranian poetry
- Workout ◦ Running (finished several half-marathons and Madison marathon 2016, and training for my second marathon)
- Triathlon (finished Door County Half Ironman 2016 and 2017, and several sprint distance races)

Languages

English, Farsi, Kurdish

References

Available upon request