

Kayhan Moharreri

395 Dreese Laboratories
2015 Neil Ave #395, Columbus, OH 43210

Email: moharreri.1@osu.edu

Phone: (614) 999-5446

URL: <http://www.cse.ohio-state.edu/~moharreri.1>

Education

- Ph.D. in Computer Science & Engineering, The Ohio State University (OSU), Columbus, Ohio, USA.
 - Fall 2011 – Summer 2017
 - Dissertation Topic: “Augmenting Collective Expert Networks to Improve SLA Compliance”
- M.S. in Computer Science & Engineering, The Ohio State University (OSU), Columbus, Ohio, USA.
 - Fall 2011 – Spring 2015, GPA: 3.64 / 4.00
 - Proposal Topic: “Path and Transition Recommendations for Time-constrained Expert Networks”
- B.S. in Computer Science, Shahid Beheshti University (SBU), Tehran, Iran.
 - Fall 2006 – Summer 2010, GPA: 16.81/20 (\approx 3.58 / 4.00)

Research Interests

- Data and Process Mining, Knowledge Discovery
- Text Mining, Natural Language Processing and Information Extraction
- Machine Learning and Statistical Modeling
- IT Service Improvement and Operational Analytics

Work Experience

- Data Science Researcher**, Nationwide Insurance, Columbus, Ohio, May 2013 – May 2016
 - Worked as a part-time consultant providing data-driven process improvement solutions for IT Service Management
 - Developed a customizable topic discovery tool to operate over high business impact incidents in a large-scale IT infrastructure, using topic modeling and SVM over problem-resolution datasets
 - Designed and developed a risk estimator for IT infrastructure releases determining whether an upcoming infrastructure change leads to a high impact incident, using logistic regression and regularization
 - Designed and developed a recommendation engine for ticket resolution paths to effectively achieve Service Level Agreements, using unique generative models for ticket routing
- Software Engineering Intern**, Wellpoint, Inc., Wallingford, Connecticut, May 2012 – August 2012
 - Developed a named entity de-identification tool for anonymization of patients’ sensitive records, *IBM Watson, pre-authorization of medical treatment*

Publications

Thesis: **Moharreri, K.** (2017) Augmenting Collective Expert Networks to Improve Service Level Compliance (Doctoral dissertation, The Ohio State University)

Journals:

- Moharreri, K.**, Moosavi, S., Ramanathan, J., Ramnath, R. (**in preparation**) Modeling the Dynamics of Collective Expert Networks for Reliable Response Time Estimation, *Expert Systems with Applications*.
- Moharreri, K.**, Ha, M., Nehm, R.H. (2014) EvoGrader: An Automated Online Formative Assessment Tool for Evaluating Written Explanations, *Evolution, Education and Outreach* [IF: 1.15].

Conferences:

- Moharreri, K.**, Ramanathan, J., Ramnath, R. (2016) Motivating Dynamic Features for Resolution Time Estimation within IT Operations Management, *IEEE BigData BDCOM*, Washington, D.C.
- Moharreri, K.**, Ramanathan, J., Ramnath, R. (2016) Probabilistic Sequence Modeling for Trustworthy IT Servicing by Collective Expert Networks, *IEEE COMPSAC*, Atlanta, Georgia [Full paper acceptance rate: ~18%].
- Moharreri, K.**, Sapre, A., Ramanathan, J., Ramnath, R. (2016) Cost-Effective Supervised Learning Models for Software Effort Estimation in Agile Environments, *IEEE COMPSAC QUORS*, Atlanta, Georgia.
- Moharreri, K.**, Ramanathan, Ramnath, R. (2015) Recommendations for Achieving Service Levels within Large-scale Resolution Service Networks, *ACM COMPUTE*, India [Full paper acceptance rate: ~7%].
- Babamir, F., Bayat, F., **Moharreri, K.** (2012) Secure Network Coding in Unattended Wireless Sensor Networks, *International Conference on Wireless Networks*, Las Vegas, Nevada.

- Selected Presentations & Posters:**
- Nehm, R.H., Opfer, J., Pearl, D., Boone, B. Ha, M., Thandavam Ponnuraj, G., **Moharreri, K.**, Federer, M., Beggrow, E. (2016). Building Next-Generation STEM Assessments using Machine Learning Methodologies. Proceedings of *Research and Practice Symposium. AAAS*, Washington, D.C.
 - Moharreri, K.**, Ha, M., Nehm, R.H., (2013). A web based on demand automated text scoring system, Poster presented at The 2013 Innovate Conference. Columbus, OH.

Selected Projects

- Discovering structural holes in global knowledge networks leveraging information scrapped from google scholar & google patents, Summer 2016
- Forecasting monthly volume of server provisioning requests using an ensemble of autoregressive models, Fall 2015
- Inferring destination of taxi trips based on initial partial trajectories – ECML competition on Kaggle, Summer 2015
- Named Entity Tagging on Twitter, organizing an evaluation competition for ACL 2015 workshop, Spring 2015
- Global inference for sentence compression through Integer Linear Programming – using dependency parsers to define compression constraints and to generate syntactic token depths, Spring 2014
- Innovative approach in knowledge discovery at IT service desk, clustering resolved tickets based on textual content, constructing a predictive model, enhancing responsiveness and automation, Spring & Summer 2013
- Evograder: an online automated system for grading students’ explanation on evolutionary changes using content based text classification techniques, Fall 2012 – Spring 2013 (NSF project)
- Sentiment Analysis on Twitter, semi-supervised harvesting, using emoticons to bootstrap polar words, Fall 2012
- Design and implementation of gesture based character recognition tool using shape context, Fall 2012
- Design and implementation of SpyCam: a novel way for suspect detection on android smart phones, Fall 2011
- Performance analysis of certain chain codes in representing various binary objects, Spring & Summer 2010

Teaching Experience

Graduate Teaching Associate (GTA):

- CSE 1222: Programming in C++ (Course Instructor – 40 students) OSU–Fall 2013 & Summer 2017(Instructor Evaluation Score:4.3/5)
- CSE 5243: Introduction to Data Mining (Course Grader & Substitute Instructor – 60 students) OSU – Fall 2016 & Spring 2017

Undergraduate Teaching Assistant:

- Data Structures (Teaching Assistant – 25 students) SBU – Spring 2010
- Relational Databases and the SQL language (Teaching Assistant – 30 students) SBU – Spring 2009 & 2010
- Calculus I (Teaching Assistant – 42 students) SBU – Fall 2007

Graduate Coursework

- Data Mining, NLP & IE for Social Web, Computational Linguistics, Advance Artificial Intelligence, Computer Vision (PhD Major)
- Service-oriented Enterprise Architecture, Distributed Enterprise Computing (PhD Minor)
- Network Security, Cryptography, Multimedia networking (PhD Minor)
- Operating Systems, Algorithms, Computer Architecture, Programming Languages, Computability and Complexity (PhD Core)

Invited Talks

- Augmenting collective expert networks to improve service level compliance, *Accenture AI labs*, San Jose, CA, August 2017
- Improving triage workflows via sequence modeling over collective expert networks, *Washington University in St. Louis*, MO, June 2017
- Augmenting collective expert networks to improve service level compliance, *IBM T.J. Watson*, Yorktown Heights, NY, January 2017
- Data-driven process discovery and automation in IT services platform, *Premise Data*, San Francisco, CA, September 2016
- Learning from operational data: enhancing human knowledge for enterprise support: *PARC*, Rochester, NY, November 2015

Tools & Skills

- Programming:** Python (Data Analysis, Training and Testing, NLP, Text Mining, etc.), Java (General Purpose), C/C++ (General Purpose), R (Data Exploration, Association Rule Mining)
- Numerical Computing:** MATLAB (Image Processing and Neural Networks), Maple (Numerical Methods)
- Data Science:** Scikit-learn, Lucene, Gensim, Mahout, StanfordNLP, MALLETT, NLTK, arules, SPSS-modeler, Weka, Mallet, D3, Tableau, Pandas, Power BI, MegaM, ProM, MySQL, MS SQL Server
- Web Development:** Java EE, AWS, PHP, JavaScript, jQuery