Reza Sadeghi

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Personal Statement

Reza Sadeghi has attended the department of computer science and engineering at Wright State University as a PhD student in computer science. Right now, he is a research trainee at Brigham and Women's Hospital and a graduate research assistant at Data Science for Healthcare lab in the Kno.e.sis research center. He is working on investigating applied machine learning in the fields of healthcare, web mining and information retrieval from online medical literatures and web data.
Through his research, he deals with different concepts especially, probabilistic graphical model, signal processing, machine learning, and text mining techniques. His focus is on creating smart clinical decision support systems using efficient machine learning methods and domain-specific word embedding. The throughput of his work leads to empower current computer-aided systems to leverage more from all types of structured, unstructured, and physiological signal data.

Education

Ph. D., Computer Science (GPA:4.0) May 2017 – Present
Wright State University, Department of Computer Science and Engineering, Dayton, Ohio, USA

M.S., Computer Engineering- Software (GPA:4.0) Sep 2013 – Sep 2015
International University of Imam Reza, Department of Computer and Information Technology, Mashhad, Iran
Thesis: Strengthening Support Vector Classifiers against Outliers using Fuzzy Rough Set and Evolutionary Methods

B.S., Computer Engineering- Software Sep 2008 – Jul 2012
Isfahan University of Technology , Department of Electrical and Computer Engineering, Isfahan, Iran
Project: Designing & implementation of online library management website in IUT High School

Research Interests

Information retrieval from online medical literatures and social media
Design and implementation of Expert Systems with the aim of outlier detection
Modeling complex systems using probabilistic graphical models, deep learning, and Fuzzy Logic
Clinical decision support systems based on the state-of-the-art machine learning and signal processing methods

Research Experience

Research Trainee May 2019 – Present
Division of Sleep and Circadian Disorders, Brigham and Women's Hospital, Harvard Medical School, MA, USA
Novel sleep apnea biomarkers
Sleep apnea physiology and analytical techniques

Graduate Research Assistant May 2017 – Present
Kno.e.sis Research Center, Wright State University, Dayton, OH, USA
Creating knowledge graph based on medical literatures
Validating wearable devices for continuous activity measurement
Sleep quality prediction in elderly people using physiological signals
Applying probabilistic graphical model structure learning in learning progress
Using signal processing and soft computing to predict the early hospital mortality
Detecting changes in behavior and activity patterns of dementia caregivers by analyzing their vital signals

Graduate Research Assistant Nov 2013 – Sep 2015
International University of Imam Reza, Department of Computer and Information Technology, Mashhad, Iran
Nurse scheduling based on Stochastic Programming
Strengthening Support Vector Classifiers against outliers
Feature Reduction and Selection based on Fuzzy Rough Set

Teaching Experience

Graduate Teaching Assistant Sep 2014 – May 2015

International University of Imam Reza, Department of Computer and Information Technology, Mashhad, Iran

Advanced mathematics in computer engineering: The applications of fuzzy logic by MATLAB Fuzzy toolbox
Multimedia systems: Creating dynamic website using HTML 5, CSS, and Java Script
Advanced Computer programming & Computer programming: Basic concepts of C and C++

Working Experience

Executive manager and computer trainer Sep 2011 – Aug 2016

Soheil Education Complex, Tehran, Iran

Organization of student information
Training multimedia creation by Microsoft Power Point and Autoplay software

Technical Strengths

Database: PostgreSQL, Oracle, Microsoft SQL Server
Programming language: R, MATLAB, HTML, CSS, C#, C, C++, JavaScript, Python, ASP.NET
Packages: bnlearn, RPostgreSQL, Rmatlab, caret, Scikit-learn, igraph, network, RCrawler, Keras, TenseorFlow, Isa, NLPre, OpenNLP, Rcmdr

Journal Publications

- **R. Sadeghi**, T. Banerjee, J. C. Hughes, & L. W. Lawhorne (2019), "Predicting sleep quality of caregivers using physiological signals", Accepted in *Computers in Biology and Medicine*. (Impact factor: 2.115)

- **R. Sadeghi**, T. Banerjee, W. Romine (2018), "Early Hospital Mortality Prediction using Vital Signals", *Smart Health*, 9, 265-274.

- J. Hamidzadeh, M. Zabihimayvan, **R. Sadeghi** (2018), "Detection of Web site visitors based on fuzzy rough sets", *Soft Computing*, 22(7), 147-158, April 2018. (Impact factor: 2.367)

- **R. Sadeghi**, J. Hamidzadeh (2018), "Automatic support vector data description", *Soft Computing*, 22(1), 147-158, January 2018. (Impact factor: 2.367)

- M. Zabihimayvan, **R. Sadeghi**, H. NathanRude, D. Doran (2017), "A soft computing approach for benign and malicious web robot detection", *Expert Systems with Applications*, 87, 129-140, November 2017. (Impact factor: 3.768)

- J. Hamidzadeh, **R. Sadeghi**, Neda Namaei (2017), "Weighted support vector data description based on chaotic bat algorithm", *Applied Soft Computing*, 60, 540-551, November 2017. (Impact factor: 3.907)

- Gholinezhad Devin, K. Abedzadeh Ghuchani, **R. Sadeghi**, H. Koosha (2015), "Dynamic Facility Location with Stochastic Demand", *Shiraz Journal of System Management*, 3:3, 77-90, Fall 2015.

- Gholinezhad Devin, K. Abedzadeh Ghuchani, **R. Sadeghi** (2013), "Stochastic Facilities location Model by Using Stochastic Programming", *Shiraz Journal of System Management*, 1:4, 59-71, October 2013

Conference Publications

- M. Zabihimayvan, **R. Sadeghi**, D. Doran, M. Allahyari (2019), "A Broad Evaluation of the Tor English Content Ecosystem", Accepted in *The Web Science 2019*.

- **R. Sadeghi**, J. Hamidzadeh (2015), "SVDD based on Rough fuzzy set", *20th National Conference of Iranian computer committee* (*CSICC2015*), March 3, 2015 (In Persian).

- **R. Sadeghi**, A. Shaeen, H. Abbasi, J. Hamidzadeh (2014) ,"Inducing intuitionistic fuzzy decision tree based on maximum ambiguity in big data", *Second International Conference on Intelligent Information Networks and Complex Systems* (*IINCS2014*), November 26, 2014 (In Persian).

- J. Arefi, J. Hamidzadeh, A. Gholinezhad Devin, **R. Sadeghi**, S. Fayaz (2014), "Balancing time, cost, quality and network resources by considering time value of money and extended Fuzzy Logic", *Fourteenth Iranian Conference on Fuzzy Systems* (*ICFS2014*), August 19, 2014 (In Persian).

- **R. Sadeghi**, A. Shaeen, M. Vafaijahan (2014), "Improving fast Distance Vector convergence Protocol using enhanced Hidden Markov Model", *First National Conference on Computer Engineering and Information Technology Management* (*CEITM2014*), May 29, 2014 (In Persian).

- J. Hamidzadeh, A. Shaeen, **R. Sadeghi** (2014), "Using Fuzzy Logic to Solving Worm Hole Attack", *First National Conference on Computer Engineering and Information Technology Management* (*CEITM2014*), May 29, 2014 (In Persian).

- Gholinezhad Devin, **R. Sadeghi**, M. Hasan Nejat, J. Hamidzadeh (2014), "Project scheduling with resource constraints using fuzzy model extension", *Seventh International conference of Iranian Operations Research Society* (*OR2014*), May 14, 2014 (In Persian).

- Gholinezhad Devin, K. Abedzadeh Ghuchani, **R. Sadeghi**, J. Hamidzadeh (2014), "Dynamic Stochastic facility location using random scheduling", *Seventh International conference of Iranian Operations Research Society* (*OR2014*), May 14, 2014 (In Persian).

- V. Fazelinia, A. Ebrahimi Moghaddam, **R. Sadeghi**, J. Hamidzadeh (2014),"Robot routing with hybrid fuzzy logic and HMM", *First National Conference on ECSS* (*Moj 2014*), May 10, 2014 (In Persian).

Patent

M. Zabihimayvan, **R. Sadeghi**, D. Doran (2018), "Soft Computing Methods for Feature Selection for Web Agent Detection", June 2018, U.S. Provisional Patent, Pending.

Leadership and Service Activities

- The program committee of WWW, ICACR , and Biomedical Research (2018)
- The program committee of IntelliSys, Computing conference, FUZZ-IEEE, ICACR, and Web Intelligence conference (2019)
- The reviewer of IEEE Transactions on Fuzzy Systems (Feb 2018- Present), Journal of Medical Internet Research (Aug 2018- Present), International Journal of Science and Business (Jun 2018- Present), IEEE Big Data 2018, Knowledge-Based Systems (Feb 2019- Present), International Journal of Environmental Research and Public Health (Apr 2019- Present), Journal of Big Data (Apr 2019- Present), Pattern Recognition (May 2019- Present)
- The editorial board member of Mathematics and Computer Science (2018- 2020)
- Academic outreach coordinator of Biomedical Research and Technology Association (Feb 2018- Sep 2018)
- SIGIR conference student volunteer, Ann Arbor, MI (2018)

Honors and Awards

- Received NSF travel award for IEEE/ACM CHASE2018, Washington, D.C., 2018
- Best paper award for publishing "Detection of Web site visitors based on fuzzy rough sets", 2017
- Best paper award for publishing "Automatic support vector data description", 2016
- Top researcher at International University of Imam Reza, 2016

Certifications

Seminar on Artificial Intelligence & Virtual Reality with Bayesian Networks & BayesiaLab Feb 2018- Present
Bayesia, License CREDLY-14502538

Probabilistic Graphical Models 1: Representation (with Honors) Sep 2017- Present
Stanford University on Coursera, License 93VRVV253F72

Course Completion in Biomedical Research Investigators Jun 2017-Jun 2020
Collaborative Institutional Training (CITI), Record ID 23266575

Course Completion in Data or Specimens Only Research Jun 2017-Jun 2020
Collaborative Institutional Training (CITI), Record ID 23266577

Course Completion in Responsible Conduct of Research for Biomedical Jun 2017-Jun 2020
Collaborative Institutional Training (CITI), Record ID 23266576

Internet searching methodologies & Referencing techniques by Zotero Dec 2014 - Present
Research Management at Imam Reza International University, License 16793

References

1. Dr. Tanvi Banerjee
   Assistant Professor, Department of Computer Science and Engineering
   Wright State University, 3640 Colonel Glenn Hwy, Dayton, OH 45435
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2. Dr. Derek Doran
   Associate Professor, Department of Computer Science and Engineering
   Wright State University, 3640 Colonel Glenn Hwy, Dayton, OH 45435
   derek.doran@udayton.edu

3. Dr. Saeedeh Shekarpour
   Assistant Professor, Department of Computer Science
   University of Dayton, College Park, Dayton, OH 45469-2160
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4. Dr. Mehdi Allahyari
   Assistant Professor, Department of Computer Science
   Georgia Southern University, Statesboro, GA 30460
   mallahyari@georgiasouthern.edu

Others

Iran citizen