Hossein Soleimani

Contact Information

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Academic Employment

Postdoctoral Fellow, Department of Computer Science, Johns Hopkins University, working with Dr. Suchi Saria. (July 2016 - Present)

Education

Pennsylvania State University, University Park, PA

Ph.D., Electrical Engineering (Minor: Statistics), January 2012 - June 2016
- Advisor: Dr. David J. Miller

University of Tehran, Tehran, Iran

M.Sc., Electrical Engineering, 2011

Ferdowsi University of Mashhad, Mashhad, Iran

B.Sc., Electrical Engineering, 2008

Research Interests

Machine learning, Probabilistic graphical models, Approximate posterior inference, Statistical modeling, Healthcare.

Honors and Awards

- Dr. Nirmal K. Bose Dissertation Excellence Award, Department of Electrical Engineering, Pennsylvania State University, 2016
- Best poster award, ICML 2016 Anomaly Detection Workshop.
- German Academic Exchange Service (DAAD) scholarship for a 6-month research program at University of Rostock, Germany, July-December 2010.
- Ranked second in national university exam for M.Sc. program, Iran, 2008.

Peer-Reviewed Publications

- H Soleimani, D J Miller, "Semi-supervised multi-label topic models for document classification and sentence labeling," In CIKM, pages 105-114, 2016. Code:https://github.com/hsoleimani/MLTM (acceptance rate: 23%)
- H Soleimani, D J Miller, "ATD: Anomalous Topic Discovery in High Dimensional Discrete Data," *IEEE Transactions on Knowledge and Data Engineering*, DOI: 10.1109/TKDE.2016.2561288, preprint: arXiv:1512.06452. Code: https://github.com/hsoleimani/ATD
- H Soleimani, D J Miller, "Parsimonious topic models with salient word discovery," *IEEE Transactions on Knowledge and Data Engineering*, vol. 27, pp. 824-837, 2015. preprint: arXiv:1401.6169. Code: https://github.com/hsoleimani/PTM
- H Soleimani, D J Miller, "Exploiting the Value of Class Labels in Topic Models for Semi-Supervised Document Classification," *IEEE International Joint Conference on Neural Networks*, 2016. Code: https://github.com/hsoleimani/MCCTM
- H Soleimani, D J Miller, "Sparse Topic Models by Parameter Sharing," In *Machine Learning for Signal Processing (MLSP), 2014 IEEE International Workshop on*, pp. 1-6.
- D J Miller, H Soleimani, "On an Objective Basis for the Maximum Entropy Principle," *Entropy*, vol. 17, pp. 401-406, 2015.
- H Soleimani-B, C Lucas, B N Araabi, L Schwabe, "Adaptive prediction of epileptic seizures from intracranial recordings," *Biomedical Signal Processing and Control*, vol. 7, pp. 456-464, 2012.

- H Soleimani-B, C Lucas, B N Araabi, "Fast evolving neuro-fuzzy model and its application in online classification and time series prediction," *Pattern Analysis & Applications*, vol. 15, pp. 279-288, 2012.
- H Soleimani-B, C Lucas, B N Araabi, "Recursive Gath-Geva clustering as a basis for evolving neuro-fuzzy modeling," *Evolving Systems*, vol. 1, pp. 59-71, 2010.

Teaching Experience

- Lab Instructor, Digital Signal Processing, Pennsylvania State University, 7 semesters.
  - Latest Student Rating of Teaching Effectiveness (SRTE): 6.63/7.0, Average: 5.78.
  - Contributed in designing the lab experiments.
- Invited Speaker, Tutorials on Machine Learning, AIG, summer 2015.
- Teaching Assistant, Linear Control Systems, Ferdowsi University of Mashhad, 1 semester.

Service Activities

Reviewer for IEEE Transactions on Neural Networks and Learning Systems, Journal of Neuroscience Methods, International Machine Learning Conference (ICML), Evolving Systems, ICASSP, and ICDCS.

Programming and Software

- Proficient in C, Python, MATLAB.
- Experienced in R, Linux, LaTeX, and Simulink.
- Familiar with Hadoop, SQL, Apache Spark.

Select Graduate Courses

- Machine Learning
- Neural Networks
- Stochastic Processes and Monte Carlo Methods
- Computationally Intensive Statistical Inference
- Probability Theory (Measure theoretic foundation of probability)
- Asymptotic Analysis (A rigorous introduction to statistical large-sample theory)
- Detection and Estimation Theory (Decision theory, Bayes and Neyman-Pearson criteria, etc)
- Dimension Reduction Methods
- Statistical Analysis of Discrete Data
- Statistical Signal Processing
- Information Theory

Work Experience

AIG, Data Science Intern, New York, Summer 2015

- Applied several natural language processing techniques to gather insight from massive collections of insurance claim data.
- Investigated different topic modeling techniques to analyze trending insurance risk topics.
- Worked with different big data platforms such as Hadoop and Apache Spark.

References

Available upon request.