Samaneh Aminikhanghahi

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Education

Jan 2015– August 2018 **PhD student in Computer Science (Artificial Intelligence)**, *Washington State University,* Pullman, WA.

Advisor: Prof. Diane Cook

May 2013 – Dec 2014 **MSc in Computer Science (Artificial Intelligence)**, *South Dakota State University*, Brookings, SD.

Advisor: Prof. Sung Shin

Sep 2003 – Sep 2006 **MSc in Electrical Engineering (Control Engineering)**, *K. N. Toosi University of Technology,* Tehran, Iran.

Advisor: Prof. Mohammad Teshnehlab

Sep 1999 – Sep 2003 **BSc in Electrical Engineering (Electronic Engineering)**, *University of Tehran*, Tehran, Iran.

Professional Experience

Jan 2015 – August 2018 **Graduate Research assistant.** Artificial Intelligence Lab, Department of Computer Science and Electrical Engineering, Washington State University, Pullman, WA.

- Fall detection in smart homes (Collaboration with Commonwealth Scientific and Industrial Research Organization -CSIRO, Australia)
- Applying change point detection technique for smart home transition detection and prompting system
- Applying change point detection technique for personalized smart home prompting and intervention system
- Developing new Unsupervised machine learning algorithm for online change point detection
- Automate daily activity segmentation in smart homes
- Improving Smartphone Prompt Timing through Activity Awareness
- Using google glass to improve performance of Homonymous Visual Field Defects

May 2013 – Dec 2014

Graduate Research assistant. Computational and Convergence Technology Lab, Department of Computer Science and Electrical Engineering, South Dakota State University, Brookings, SD.

- Computer Aided Diagnosis (CAD) system to classify tumor information from Mammogram Images
- Extract Tumor Information from Microwave Tomography Breast Cancer Screening
- Develop a Restaurant Management Software Using Agile process
- Built a C compiler in C++ with modules of lexical analyzer, LL1 parser and instruction scheduler

March 2006 – Dec 2011

Researcher. Electronic and Communication Divison, Academic Research center, Tehran, Iran.

- Design and fabrication the system's vital signs and living environment
- Design and fabrication the data capturing & environmental sensing system
- Design and fabrication the Data Acquisition System
- Design tester for general electronic systems
- Calculation and optimization of electronic systems reliability

Jan 2004 – Feb 2006

Graduate Research assistant. Intelligent Control Lab, Department of Electrical Engineering, Khaje Nasir Toosi University (KNTU), Tehran, Iran.

- Design and Implementation of a Variable Structure ANFIS network Controller based on SUGENO model

Publication

Aminikhanghahi, S. and Cook, D.J., 2017, Near-Real-Time Change Point Detection in High-dimensional Time Series Data. Submitted to ACM Transactions on Intelligent Systems and Technology (TIST).

Aminikhanghahi, S., Fallahzadeh, R., Sawyer, M. and Cook, D.J., "Thyme: Improving Smartphone Prompt Timing through Activity Awareness." Submitted to 16th IEEE International Conference On Machine Learning And Applications (ICMLA 2017).

Aminikhanghahi, S. and Cook, D.J., 2017, Using Change Point Detection to Automate Daily Activity Segmentation. 13th Workshop on Context and Activity Modeling and Recognition.

Fallahzadeh, R., **Aminikhanghahi, S.**, Gibson, A.N. and Cook, D.J., 2016, August. Toward personalized and context-aware prompting for smartphone-based intervention. In Engineering in Medicine and Biology Society (EMBC), IEEE (pp. 6010-6013).

Aminikhanghahi, S. and Cook, D.J., 2016. A survey of methods for time series change point detection. Knowledge and Information Systems, pp.1-29.

Aminikhanghahi, S., Shin, S., Wang, W., Jeon, S.I. and Son, S.H., 2016. A new fuzzy Gaussian mixture model (FGMM) based algorithm for mammography tumor image classification. Multimedia Tools and Applications, pp.1-15.

Pack, C., **Aminikhanghahi, S.**, Shin, S., Jeon, S.I. and Son, S.H., 2015. An Optimized Fuzzy Support Vector Machine Classifier using Breast Mammogram Tomography: Trade-off

between Specificity and Sensitivity. International Information Institute. Information, 18(9), p.3979.

Aminikhanghahi, S., Shin, S., Wang, W., Jeon, S.I., Son, S.H. and Pack, C., 2015, April. Study of wireless mammography image transmission impacts on robust cyber-aided diagnosis systems. In Proceedings of the 30th Annual ACM Symposium on Applied Computing (pp. 2252-2256).

Aminikhanghahi, S., Shin, S., Wang, W., Son, S.H. and Jeon, S.I., 2014, October. An optimized support vector machine classifier to extract abnormal features from breast microwave tomography data. Proceedings of the Conference on Research in Adaptive and Convergent Systems (pp. 111-115).

Aminikhanghahi, S., Wang, W., Shin, S., Son, S.H. and Jeon, S.I., 2014, March. Effective tumor feature extraction for smart phone based microwave tomography breast cancer screening. In Proceedings of the 29th Annual ACM Symposium on Applied Computing (pp. 674-679).

Skills

Programming Language	Python, MATLAB, R
Mobile Programming	IOS
Others	Machine learning algorithms, Data Mining, Smart Environments, Time series analysis, Optimization