Sara Soltaninejad

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OVERVIEW

PhD student, Computer Vision, Machine Learning, Medical Image Processing .

EDUCATION

- **PhD**, **Computer Science**, (2016-Now)
  Department of Computing Science, **University of Alberta**, Edmonton, Canada.
  - Advisor: Professor Anup Basu, Dr Irene Cheng
  - Total Cumulative GPA: 4/4
  - Area of Study: Image Processing and Computer Vision.
- **M.S**, **Computer Engineering**, (2013)
  Department of Computer Engineering,**Shiraz University**, Shiraz, Fars, Iran.
  - Thesis Topic: Computer aided diagnostic system for lung nodule detection based on texture features
  - Advisor: Dr Farshad Tajeripour
  - Area of Study: Artificial Intelligence (AI)
  - Total Cumulative GPA: 18.03/20
- **B.S**, **Information Technology Engineering**, (2010)
  Department of Electrical and Computer Engineering**Isfahan University of Technology**, Isfahan, Iran.
  - Thesis Topic: Risk management in information systems
  - Advisor: Professor Mehdi berenjkoub
  - Area of Study: Information Technology Engineering
  - Total Cumulative GPA: 16.74/20
- **Diploma**, **High School, Middle School** , (2006)
  Center of National Organizations for Development of Exceptional Talents (NODET), Shahre-Kord, Iran.
  - Area of Study: Physics & Mathematics
  - Total Cumulative GPA: 19.75/20

PROMINENT COURSES

- **PhD**
  Probablistic Graphic Modelling: 4/4, Convolutional Neural Network: 4/4, Computer Vision & Applications: Medicine & Industry: 4/4, Teaching & Research methods: 4/4
- **M.S**
  Statistical Pattern Recognition: 17.5/20, Neural Networks: 17.25/20, Fuzzy Systems: 17/20, Machine Learning: 17.5/20, Evolutionary Computing: 19/20, Digital Image Processing: 18/20, Machine Vision: 16.5/20, Seminar: 19/20
- **B.S**
  Basic Programming: 19.25/20, Advanced Programming: 17.25/20, Discrete structures: 17/20, Computer Basics: 18, Engineering Statistics and Probability: 18, Computer Architecture: 19/20, Operating Systems: 19/20, Software engineering: 17/20, Introduction to Artificial Intelligence: 19/20, Digital Electronic: 19

PROJECTS AND RESEARCH EXPERIENCE

- Removal of Batch Effects from fMRI Images Using Probabilistic Graphic Techniques, Under Supervision of Professor **Russell Greiner**.
- Image Super Resolution Using Deep Convolutional Neural Network, Under Supervision of Professor **Nilanjan Ray**.
- Robust Lung Segmentation Combining Adaptive Concave Hulls with Active Contours under Supervision of Professor **Anup Basu** and Dr **Irene Cheng**.
- Computer Aided diagnostic system for lung nodule detection in CT images based on novel texture features, in matlab, Under Supervision of Dr **F.Tajeripour**, Dr **Z.Azimifar** and Dr **R.Boustani**.
- Computer Aided diagnostic system for lung nodule detection in CT images based on KNN classifier and active contour model, Under Supervision of Dr **F.Tajeripour**.
- Lung segmentation method based on concavity degree of border points, Under Supervision of Dr **F.Tajeripour**.
- Implemented A Novel Supervised Bi-Level Thresholding Technique Based on Particle Swarm Optimization, Under Supervision of Dr **F.Tajeripour**.
- Implemented a new texture descriptor based on non-uniform patterns in Local Binary Pattern, Under Supervision of Dr **F.Tajeripour**.
- Implementing a novel supervised thresholding algorithm based on PSO optimization algorithm, in matlab, Under Supervision of Dr **F.Tajeripour**.
- Implementing a scheme for Persion handwritten digits based on MLP neural network, in matlab, under supervision of Dr **F.Mansouri**.
- Implementing an evolutionary image segmentation based on multiobjective clustering, in matlab, under supervision of **Dr A.Hamzeh**.
- Research about semantic characteristic of lung nodule, under supervision of **Dr.Z.Azimifar**.

PUBLICATIONS

- **Sarah Soltaninejad**, David Yee, Deborsi Hazarika, Gaylord Mbuyi, Rishi Barnwal, Sara Soltaninejad, Anup Basu, Medical Image Compression Based on Region of Interest using Better Portable Graphics (BPG), IEEE International Conference on Systems, Man, and Cybernetics (SMC), 2017.
- **Sarah Soltaninejad**, Irene Cheng, Anup Basu, Robust Lung Segmentation Combining Adaptive Concave Hulls with Active Contours, IEEE International Conference on Systems, Man, and Cybernetics (SMC), 2016.
- **Sarah Soltaninejad**, Mohammad Hossein Shakoor, Farshad Tajeripour, Lung nodule segmentation based on modified local binary pattern, International Journal of Scientific and Engineering Research, 2014.
- Alimohammad Nickfarjam, **Sarah Soltaninejad**, Farshad Tajeripour, Supervised Bi-level Thresholding based on ParticleSwarm Optimization.Arabian journal for science and engineering (AJSE), 2014.
- **Sarah Soltaninejad**, Farshad Tajeripour, Lung segmentation method based on concavity degree of border points 11th Intelligent Systems Conference (ICIS), 2014.
- Alimohammad Nickfarjam, **Sarah Soltaninejad**, Farshad Tajeripour, Supervised bi-level thresholding based on Particle Swarm Optimization. Artificial Intelligence and Signal Processing (AISP), 2012.
- **Sarah Soltaninejad**, Mohsen Keshani, Farshad Tajeripour, lung nodule detection by KNN classifier and active contour modeling and 3D visualization.Artificial Intelligence and Signal Processing (AISP), 2012.

AWARDS & HONORS

- Admitted for recruitment scholarship doctoral, Department of Computing Science, University of Alberta, Edmonton, Canada 2016
- Admitted for Ontario Trillium Scholarships (OTS), University of Ontario Institution of Technology, Toronto, Canada. 2015
- Candidate as graduated for Amirkabir University of Technology, Tehran, Iran. 2010
- Admitted to Shiraz University as a graduate student in a field of Computer Engineering - Artificial Intelligence major, Shiraz, Fars, Iran. 2010
- Admitted to entrance English exam in Shiraz University, Shiraz, Iran. 2010
- Admitted to Isfahan University of Technology as a graduate student in a field of Information Technology Engineering, Isfahan, Iran. 2006
- Selected for National Organizations for Development of Exceptional Talents (NODET) Middle school and High school Iran. 1999 &2002
- Semifinalist of National Inform Mathematics & Computer Olympiads, Iran. 2003

- Ranked 1st in programming Contest about Game on Linux at school. 2004
- Semifinalist of National Inform astronomy Olympiads. 2004

TEACHING EXPERIENCE

- **PhD**
  - Graphics Animation 3DS MAX. Fall 2016
    Instructor: professor Anup Basu
  - Introduction to Computing. Fall 2016
    Instructor: professor Anup Basu
  - Introduction to Data Struction. Winter 2016
    Instructor: professor Janelle Harms Instructor: professor Osmar Zaiane
  - Introduction to Multimedia Technoloty. Winter 2016, 2017
    Instructor: professor Anup Basu
- **M.S**
  - Logical Circuit. Fall & Spring 2010-2011
    Instructor: Associate Professor Fariborz Sobhanmanesh
  - Image Processing. Fall & Spring 2011-2012
    Instructor: Associate Professor Farshad Tajeripour
  - Design of Urban Railway testing. Spring 2012
    Instructor: Associate professor Farshad Tajeripour
- **B.S**
  - Advanced Programming. Fall 2007-2009
    Instructor: Associate Professor Mohammad H. Mahdavi
- ***Tutoring***
  - Neural Network. 2010-2012
  - Advanced Programming. 2009-2014
  - Logical Circuit. Fall 2009-Fall 2011

EXTRA CURRICULAR ACTIVITIES

- Volunteer Member of artist group for Iranian student in the University of Alberta (ISAUA). 2015 to now
- Member of toastmasters clubs of University of Alberta. 2015 to now
- **Member of Ada's Team of University of Alberta which is a group of sciences women**. 2015 to now
- Member of digital painting group of the art department of university of Tehran. 2013 to 2015
- Member of paint night group of University of Alberta. 2015 to now

- Member of aerobic group of university of Tehran. 2013 to 2015
- Member of Movie and music community of Shiraz University. 2010 to 2013
- Special Member of English Chat Room of Shiraz University. 2010 to 2012
- Chairman of Persian Literature community of NODET School, Shahre-kord, Iran 2002-2006
- Proficient in Drawing, sketching and digital painting. 2000_now

TECHNICAL SKILLS

- Proficient in programming: Matlab, Python, C++, C#, C, Qt, Java, VB, Pascal, Delphi, VHDL.
- Proficient in Web Design: HTML, PHP, ASP, ASP.Net, JScript.
- Proficient in Operating Systems: Linux, Dos, Windows (95/98/NT/2000/XP)
- Proficient in Typesetting: TEX, LATEX, Microsoft Word
- Other professional skills: MySQL, SQL Server, JBuilder, XML, Microsoft office, SAMIM, Multimedia Viewer, 3Dsmax, MotionBuilder, Unity.
- Familiar with: OpenCV, Perl, Prolog, Photoshop, OpenGL, Electronic Workbench, Rational Rose, Oracle
- Deep learning libraries such as Theano, Tensorflow

REFERENCES

available upon request.