

Curriculum Vitae



Hadi Seyedarabi

**Professor of Electrical Engineering,
Faculty of Electrical & Computer Engineering,
University of Tabriz**

Personal Data:

Name	Surname	Date of Birth	Nationality	Sex	Marital Status
Hadi	Seyedarabi	1970	Iranian	M	Married

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Educational Background: (Last One First)

Certificate Degree	Field of Specialization	Name of Institution Attended	Date Received
Ph.D.	Electrical Eng.	University of Tabriz, Tabriz, IRAN Visiting Student at the University of Ottawa, Canada, 2005-2006.	2006
M.Sc.	Electrical Eng.	KNT University of Technology, Tehran, IRAN	1996
B.Sc.	Electronic Eng.	University of Tabriz, Tabriz, IRAN	1993
Diploma	Math. And Physics	Sadi High School ,Tabriz, IRAN	1989

Title of Post-Graduate Thesis:
Speech Coding using Sinusoidal Transform Coding (STC)

Title of Doctorate Thesis:
Facial expressions Recognition from Image Sequences using Expert Systems.

Teaching Experiences:

Title of Course	Level	Dates		Name of Institution
		From	To	
Biomedical Signal Processing	BS	2023	Present	University of Tabriz
Signal Processing in Neuroscience	PhD	2021	Present	University of Tabriz
Deep Learning Applications in Computer Vision	PhD	2016	Present	University of Tabriz
Machine Learning	PhD	2015	Present	University of Tabriz
Machine Vision	PhD , MS	2008	Present	University of Tabriz
Digital Image Processing	PhD , MS	2008	Present	University of Tabriz
Advanced Topics in Video Coding	PhD	2011	Present	University of Tabriz
Video Coding	PhD , MS	2011	Present	University of Tabriz
3D Face Modelling and Animation	PhD	2010	2012	University of Tabriz
Information Theory	MS	2008	2016	University of Tabriz
Medical Image Processing	MS	2007	Present	Tabriz University of Medical Science
Signals and Systems	BS	2006	Present	University of Tabriz
Probability and Stochastic Processes	BS	2006	Present	University of Tabriz
Advanced Engineering Mathematics	BS	2006	Present	University of Tabriz
Numerical Calculations	BS	2003	2005	University of Tabriz

Academic Positions: (Last One First)

Title of Position	Field of Specialization	Date		Name of Institution
		From	To	
Professor	Electrical Engineering	2020	Present	University of Tabriz
Associate Professor		2013	2020	University of Tabriz
Assistant professor		2006	2013	University of Tabriz

Administrative and Management

Job Title	Date		Work Place
	From	To	
Editorial Board	2023	Present	Journal of Data Science and Intelligent Systems (Singapore)
Editorial Board	2022	Present	Journal of Information and Communication Technology
Editorial Board	2020	Present	The CSI Journal on Computing Science and Information Technology
Director-in-Charge	2020	Present	Tabriz Journal of Electrical Engineering (TJEE)
Technical Committee Chair	2020	2020	28 th Iranian Conference on Electrical Engineering (ICEE2020)
Technical Committee Chair	2018	2018	4th Iranian Conference on Communications Engineering (ICCE 2018)
Editorial Board	2016	Present	Journal of Advanced Signal Processing (JASP)
Head of Communications Department	2014	2018	University of Tabriz
Manager of Teaching Office	2008	2010	University of Tabriz
Supervisor of Computer Vision and Image Processing Lab.	2006	Present	University of Tabriz

Awards, Honorary Degrees and Positions:

Title of Award, Position	Issuing Authority	Country	Year
University of Tabriz best Technological Achievement Award	University of Tabriz	Iran	2023
University of Tabriz best Researcher Award (2nd place)	University of Tabriz	Iran	2012
University of Tabriz Annual Prize of Best Lecturer	University of Tabriz	Iran	2010
Iran Telecommunication Research Center (ITRC) Research Grant, awarded to my Ph.D. thesis.	ITRC	Iran	2006

Ph.D. Thesis Supervisions:

	Full Name of Student	Level	Title of Thesis	Date
	Ali Fadhel Athab	PhD	Indoor 3D Localization using convolutional Neural Networks in IoT - covered areas	Not finished yet.
	Ammar Jawad Kadhim	PhD	Hybrid Image Enhancement and Deep-Learning Techniques for Diabetic Retinopathy Detection	Not finished yet.
	Hadi Abbasi	PhD	Emotion Classification Using EEG Signals and Deep Learning Algorithms	Not finished yet.
	Mahsa Zeynali	PhD	Images generation inspired by EEG signals for Neuromarketing applications using Deep learning methods	Not finished yet.
	Aws Majeed Ghalib	PhD	Deep Learning Based Hotspots Prediction for Adaptive Virtual Small Cell in 5G Networks using GRU	Not finished yet.
	Mahsa Karimzadeh	PhD	Detection of stroke lesions from MRI images using deep learning based on Modified general regression neural network optimized with particle swarm algorithm	Not finished yet.
	Amjad Yousef Saheb	PhD	Fast and High Quality Simulation of Transcranial Direct Current Stimulation	2022
	Sepideh Nikseresht	PhD	Image Steganography Based on Improved Generative Adversarial Networks(GAN's)	Not finished yet.
	Hanieh Narimani	PhD	Image Quality Enhancement using Deep Learning Methods for Iris Detection in Low Quality Images	Not finished yet.
	Dariussh Faraji	PhD	Eye Gaze Depth Estimation Using Eye Tracking With Deep Learning	Not finished yet.
	Mohammad Amin Bagherzadeh	PhD	Visual non-rigid objects tracking using the switch between two traditional method and deep learning techniques with online learning	Not finished yet.
	Nasrin Rahimi	PhD	BCI-Based Speller System using Deep Learning	Not finished yet.
	Mohammad Mofarrah	PhD	3D Hand Pose Estimation Using Depth Images	2021
	Mahsa Khorrampanah	PhD	Computational modeling for post-stroke rehabilitation using tDCS	2020
	Hamed Alizadeh	PhD	Optimization of Elastic Optical Networks Transfer Parameters for Video Transmission	2019
	Mehdi Dehghani	PhD	Mobile Robot Localization Using Inertial Sensors and Cameras	2018
	Milad Abdollahzadeh	PhD	Improving the quality of video transmission over wireless multimedia sensor networks	2018
	Sajad Shafipour	PhD	Appearance-based 3D Face Recognition in Video Sequences	2015
	Mohammad Asadpour	PhD	High Speed Data Transmission in PLC Channels using Adaptive Multicarrier Modulation	2015
	Reza Afrouzian	PhD	3D Pose Estimation in Sport Scenes	2015
	Razieh Pourdarbani	PhD	Date fruit sorting based on different levels of ripeness using machine vision	2013

M.Sc. Thesis Supervisions:

	Full Name of Student	Level	Title of Thesis	Date
	Farjam Fazeli	MS	Authentication with EEG signals using Machine Learning Methods	Not finished yet.
	Hussein Nasser Al Islami	MS	Investigating the effects of changing the density and color intensity of the visual stimulus on subliminal visual perception and cognition: an event-dependent potential study	Not finished yet.
	Hossein Panaji	MS	Melanoma Skin Cancer Detection Using Convolutional Neural Networks	Not finished yet.
	Payman Hossinzadeh	MS	Detection and Classification of Lung Cancer in Whole Slide Histopathology Images Using Convolutional Neural Networks	Not finished yet.
	Saeideh Golabshekar	MS	Brain vessels segmentation using U-net deep learning framework	Not finished yet.
	Mehdi Safavi	MS	Traffic - Sign Detection in Iran Using Convolutional Neural Network	2022
	Taha Noshahri	MS	COVID-19 Detection through Transfer Learning Using Lung CT scan Images	2022
	Maryam Poursaeid	MS	Diagnosing Alzheimer's Disease with Transfer Learning for Deep Neural Networks	2022
	Mahsa Esmaiellou	MS	Early recognition and classification of diabetic retinopathy using deep learning	2023
	Faezeh Mosayyebi	MS	Gender Detection using Convolutional Neural Networks	2021
	AmirHosein Abbasian	MS	Improvement of diabetic retinopathy classification using deep learning algorithms	2021
	Poune Saeidi Pakdel	MS	Identification of autism spectrum disorder using deep learning	2021
	Parisa Zeynalzadeh	MS	Vehicle and Pedestrian Detection based on Deep Learning Techniques for Advanced Driver Assistance System (ADAS)	2020
	Vahid Zafari Ghadim	MS	Automatic Segmentation and Zoning of Multiple Sclerosis (MS) Brain Lesions from MRI	2020
	Hadi Abbasi	MS	EEG Signal Data Classification for Brain-Computer Interface (BCI) Applications using Deep Learning Algorithms	2020
	Farshad Ebrahimi	MS	Recognition, Perception and Completion of Truncated and Occluded Images Inspired by Birds Visual Systems for an AGI-Based Agent	2019
	Maryam Yousefian	MS	Computational Modeling According to Anatomy Specifications of Stroke Patients with Aphasia	2019
	Ali Amani	MS	Diagnosing Location and Extent of Aphasia Lesions in Stroke Patients before and After Rehabilitation using MRI Images	2019
	Masoud Mohtadifar	MS	Visual Navigation System Inspired by Insects Navigation for an AGI based Agent	2019
	Sahar Salimpour	MS	Image Locations Storage and Retrieval for an AGI-based Inspired by Animal Food-Storing Behaviour	2019
	Touba Malekzadeh	MS	Detection of Subtle Changes of Video using Video Magnification for Medical Applications	2018
	Amin Najafian	MS	Robot Control with BCI using EEG signals and Arduino interface Card	2018
	Haniye Narimani	MS	Multilevel Authentication using Combination of IRIS Biometric-Based Methods and Eye Gaze Tracking using Kinect	2017
	Mahsa Zeynali	MS	Unique and Cancelable Biometric-Based Cryptographic Key Generation with Repeatability using EEG	2017
	Morteza Mohammadifam	MS	Brain Tumors Detection and Segmentation in Brain MRI Images using Statistical Features	2017
	Nasrin Rahimi	MS	Design of a Brain –Computer Interface Nursing System to Control Hospital Bed	2016
	Khadije Hasanpour	MS	EEG - Based Wheelchair Control Through a Brain–Computer Interface (BCI)	2016
	Shiva Sheikhalipour	MS	Using Resting State fMRI for Diagnosis of ASD	2016
	Soniya Sarabi Asl	MS	Hand Gesture Recognition based on Hand Shapes Contour for Controlling Wheelchair	2016
	Ashkan Farrokhi	MS	Unsupervised Feature Learning for Object Recognition using Prior-Knowledge Data	2016
	Saeideh Ghanbari Azar	MS	Persian sign language (PSL) recognition using hidden Markov models (HMM)	2015
	Mohammad Iranshahi	MS	Object Tracking using Particle Filter and Wavelet Transform	2015
	Aram Ahmadi	MS	A Graph Based Classification Method for Hyperspectral Image	2014
	Forogh Shami	MS	Better detection of retinal abnormalities by accurate detection of blood vessels in retina	2013
	Milad Abdollahzadeh	MS	A Multi Focus Image Fusion Approach Based on statistical analysis using HMM	2013
	Faranak Shamsafar	MS	Multispectral and Color Analysis of Iris Recognition	2012

	Mariam Hajinia	MS	Tracking Human Lower Body Parts Using Kalman and Particle Filters	2012
	Vahdat Kazemi	MS	Multi-focus Image Fusion for Visual Sensor Network based on Redundant Wavelet Transform	2012
	Marzie Berenjkoob	MS	Coronary Artery Segmentation From 3D X-ray Data	2012
	Negar Mazloomi	MS	Image Data Clustering using Imperialist Competitive Algorithm	2012
	Fateme Soroush	MS	Dental X-ray Image Segmentation using Wavelets	2012
	Soodabeh Ghafoori	MS	Hand gesture recognition using Haar-like feature and a stochastic context-free grammar	2012
	Sajad Asl Jalili	MS	Facial Expressions Recognition and Synthesis on a Face Robot	2012
	Mohammad Reza Nikfard	MS	Occlusion Recovery in Facial Feature Tracking	2011
	Abolfazl Koohi	MS	Brain MRI Segmentation using Modified FCM Clustering	2011
	Fardin Mogimi	MS	Facial Expressions Recognition from Video using Particle Filter and SVM	2011
	Fatemeh Shirinzadeh	MS	Facial Feature Tracking using Particle Filter	2010
	Mohammad Bagher Akbari Haghighat	MS	Image Fusion for Visual Sensor Networks in Transform Domain	2010
	Hamideh Rezaee	MS	Vehicle Tracking in Visual Sensor Networks by Particle Filter	2010
	Naghme Ghazaleh	MS	Simultaneously using Watermarking and Cryptography in Visual Sensor Networks	2010
	Asghar Feizi	MS	Multi-view Human Tracking using Particle Filter	2010
	Razieh Keshavarzian	MS	Watermarking for Error Concealment in Image Transmission	2009

Research Interests:

- Image Processing and Machine Vision
- Facial Expressions Recognition (FER)
- Human-Computer Interaction (HCI)
- Medical Signal and Image Processing
- Computational Modeling of Brain
- Deep Learning Applications in Image Processing and Computer Vision

Research Activities:

Title of Project	Place of Work	Dates	
		From	To
Autism spectrum disorder diagnosis from fMRI images using Deep Learning techniques	Tabriz University of Medical Science	2020	2021
Ischemic Stroke Lesion Segmentation in MRI using Convolutional Neural Networks	Tabriz University of Medical Science	2019	2021
Diabetic Retinopathy Monitoring In Retinal Fundus Images Using Convolutional Neural Networks And Fourier Transform	Tabriz University of Medical Science	2018	2020
Computational modeling for post-stroke rehabilitation using tDCS	Cognitive Science and Technologies Council	2017	2021
Machine Vision-Based Automatic Persian Sign Language (PSL) Recognition System	University of Tabriz	2016	2017
Teeth Segmentation in Cone-Beam Computed Tomography (CBCT) Images using Watershed and Morphology Operators	Tabriz University of Medical Science	2016	2018
Supervising Image Processing and Computer Vision Lab.	University of Tabriz	2006	Now
Face Modelling and Animation (Workshop)	University of Ottawa, Canada	2005	2005
Facial Expression Recognition (visiting researcher)	University of Ottawa, Canada	2005	2006

Patents and Designs Act:

Title	Patent/Design	Applications	Date
Portable 8/16/32 Channel EEG Signal Recorders and headset	Co-design (Hardware and Software)	Helping people with severe disabilities by brain commands to use wheelchair, hospital bed, home appliances,...	2021
Face mask detection with Raspberry pi	Co-design (Hardware and Software)	Embedded portable face and mask recognition system	2020
Persian vehicle license plate recognition with Raspberry pi	Co-design (Hardware and Software)	Embedded portable car plate recognition system for home	2019
Smart pen	Patent	Transforming handwriting to digital text	2019

Membership to Scientific Associations:

Name of Institution/Association	Position Held	Country	Year
Association of Electrical Engineering	Senior Member	Iran	2018
International Association of Computer Science and Information Technology (IACSIT)	Senior Member	Singapore	2010
Iranian Society of Machine Vision and Image Processing (ISMVIP)	Senior Member	Iran	2009

Publications:

A: Books

Title	Type of Work		Publisher	Date of Publication
	Translation	Compilation		
Deep Learning for Images with TensorFlow By: Will Ballard	✓	-	Ashina Publications Iran	2021
Potato Sorting in Machine Vision System http://www.amazon.com/Potato-Sorting-Machine-Vision-System/dp/3848434733	-	✓	Lambert Publishing- Germany	2012

B: Journal Papers

Title of Paper	Authors	Place of Publication	Date of Publication
Concurrent Learning Approach for Estimation of Pelvic Tilt from Anterior-Posterior Radiograph	Ata Jodeiri, Hadi Seyedarabi, Sebelan Danishvar, Seyyed Hossein Shafiei, Jafar Ganjpour Sales, Moein Khoori, Shakiba Rahimi, Seyed Mohammad Javad Mortazavi	Bioengineering 11 (2), 194	2024
A combinational deep learning approach for automated visual classification using EEG signals	Hadi Abbasi, Hadi Seyedarabi, Seyed Naser Razavi	Signal, Image and Video Processing	2023
Gender Recognition in Masked Facial Images Using Efficientnet and Transfer	Faezeh Mosayyebi, Hadi Seyedarabi, Reza Afrouzian	International Journal of Information Technology	2023

Learning Approach			
Brain tumors segmentation using a hybrid filtering with U-Net architecture in multimodal MRI volumes	Sima Esmailzadeh Asl, Mehdi Chehel Amirani, Hadi Seyedarabi	International Journal of Information Technology Volume 16, pages 1033–1042, (2024)	2023
Classification of EEG signals using Transformer based deep learning and ensemble models	Mahsa Zeynali, Hadi Seyedarabi, Reza Afrouzian	Biomedical Signal Processing and Control 86, 105130	2023
Improvement of Basal Ganglia Detectability in Brain Single Photon Emission Computerized Tomography by Wavelet Transformation in Image Processing Domain: A XCAT Phantom Study	Marzie Saeidikia, Hadi Seyedarabi, Babak Mahmoudian, Jalil Pirayesh Islamian	Frontiers in Biomedical Technologies	2023
Automatic detection of autism spectrum disorder based on fMRI images using a novel convolutional neural network	Amin Majidzadeh Sabegh, Nasser Samadzadehaghdam, Hadi Seyedarabi, Tahereh Ghadiri	Research on Biomedical Engineering, 1-7	2023
Using a photographic image processing method as a part of the QA program in some radiotherapy departments where CTs are involved with COVID-19 patients	Ahad Zeinali, Yashar Ghareayaghi, Hadi Seyedarabi, Hassan Saberi	Health Science Monitor 2 (1), 1-9	2023
3D tooth segmentation in cone-beam computed tomography images using distance transform	S Kakehbaraei, R Arvanaghi, H Seyedarabi, F Esmaili, AT Zenouz	Biomedical Signal Processing and Control 79, 104122	2023
Automatic segmentation of the brain stroke lesions from MR flair scans using improved U-net framework	S Khezrpour, H Seyedarabi, SN Razavi, M Farhoudi	Biomedical Signal Processing and Control 78, 103978	2022
A MATLAB-Based Toolbox to Simulate Transcranial Direct-Current Stimulation Using Flexible, Fast, and High Quality Tetrahedral Mesh Generation	AY Sahib, H Seyedarabi, R Afrouzian, M Farhoudi	IEEE Access 10, 76573-76585	2022
3D hand pose estimation using RGBD images and hybrid deep learning networks	M Mofarreh-Bonab, H Seyedarabi, BM Tazekhand, S Kasaei	The Visual Computer, 1-10	2022
Imaging modalities in differential diagnosis of Parkinson's disease: opportunities and challenges	T Mortezaazadeh, H Seyedarabi, B Mahmoudian, JP Islamian	Egyptian Journal of Radiology and Nuclear Medicine 52 (1), 1-12	2021
Development of pixel-wise U-Net model to assess performance of cereal sowing	H Karimi, H Navid, H Seyedarabi, RN Jørgensen	Biosystems Engineering 208, 260-271	2021
Effect of triangular electrode schemes on broca's cortical stimulation: Conventional and HD-tDCS study	A Amani, M Yousefian, H Seyedarabi, M Farhoudi	Medical & Biological Engineering & Computing, Springer, 2021	2021
Secrecy capacity results for a secure NOMA-based cognitive radio network with an external eavesdropper	KA Mehr, JM Niya, H Seyedarabi, SK Nobar	Physical Communication 43, 101224	2020
Optimization of montages and electric currents in tDCS	M Khorrampanah, H Seyedarabi, S Daneshvar, M Farhoudi	Computers in Biology and Medicine, Volume 125, October 2020	2020
Automatic Detection and Monitoring of Diabetic Retinopathy Using Efficient Convolutional Neural Networks and Contrast Limited Adaptive Histogram Equalization	AM Pour, H Seyedarabi, SHA Jahromi, A Javadzadeh	IEEE Access, Vol.8 2020	2020
Robust FCM clustering algorithm with combined spatial constraint and membership matrix local information for brain MRI segmentation	A Kouhi, H Seyedarabi, A Aghagolzadeh	Expert Systems with Applications, Volume 146, 15 May 2020	2020

Trajectory-based recognition of dynamic Persian sign language using hidden Markov model	SG Azar, H Seyedarabi	Computer Speech & Language, Volume 61, May 2020	2020
Development of a Unique Biometric-based Cryptographic Key Generation with Repeatability using Brain Signals	M Zeynali, H Seyedarabi, B Mozaffari Tazehkand	Journal of AI and Data Mining, Volume 8, Issue 3, Summer 2020	2020
Deep learning-assisted adaptive modulation level assignment for video communication over an elastic optical network	HA Ghazijahani, H Seyedarabi, JM Niya, NM Cheung	Elsevier-Optical Fiber Technology, vol. 52-2019	2019
EEG-based single-channel authentication systems with optimum electrode placement for different mental activities	M Zeynali, H Seyedarabi	Elsevier-Biomedical Journal, Volume 42, Issue 4, August 2019, Pages 261-267	2019
The Correcting Approach of Gyroscope-Free Inertial Navigation Based on the Applicable Topological Map	M Dehghani, H Kharrati, H Seyedarabi, M Baradarannia	Journal of Computing and Information Science in Engineering, JUNE 2019, Vol. 19	2019
Optimal HEVC Configuration for Wireless Video Communication Under Energy Constraints	M Abdollahzadeh, H Seyedarabi, JM Niya, NM Cheung	IEEE Access, vol 6 2018, pp 72479-72493	2018
Improvement of angular velocity and position estimation in gyro-free inertial navigation based on vision aid equipment	M Dehghani, H Kharrati, H Seyedarabi, M Baradarannia	IET Computer Vision, Vol. 12 Iss. 3, pp. 261-275	2018
Dental Segmentation in Cone-beam Computed Tomography Images Using Watershed and Morphology Operators	S Kakehbaraei, H Seyedarabi, AT Zenouz	Journal of Medical Signals & Sensors, Apr-Jun 2018;8(2):119-124.	2018
PET and MRI image fusion based on combination of 2-D Hilbert transform and IHS method	M Haddadpour, S Daneshvar, H Seyedarabi	Elsevier-Biomedical Journal, Volume 40, Issue 4, August 2017, Pages 219-225	2017
Classification of Cardiac Arrhythmias using ARTERIAL Blood Pressure Based on Discrete Wavelet Transform	R Arvanaghi, S Daneshvar, H Seyedarabi, A Goshvarpour	Biomedical Engineering: Applications, Basis and Communications, Vol. 29, No. 5 2017	2017
Fusion of ECG and ABP signals based on wavelet transform for cardiac arrhythmias classification	R Arvanaghi, S Daneshvar, H Seyedarabi, A Goshvarpour	Computer Methods and Programs in Biomedicine 151 (2017) 71–78	2017
Attack-aware cooperative spectrum sensing in cognitive radio networks under Byzantine attack	H Alizadeh, AA Sharifi, MJ Musevi Niya, H Seyedarabi	Journal of Communication Engineering 6 (1), 81-98	2017
EEG-Based Wheelchair Control Through a Brain-Computer Interface	K Hassanpour, H Seyadarabi, S Daneshvar	Advanced Signal Processing 2 (1), 7-15	2017
On Error and Bitrate Tradeoff in Visible Light Communication System to ensure HEVC Video Quality	HA Ghazijahani, M Abdollahzadeh, H Seyedarabi, MJM Niya	IJICTR, Vol. 8, No.4- 2016	2016
Pose estimation of soccer players using multiple uncalibrated cameras	R Afrouzian, H Seyedarabi, S Kasaei	Springer- Multimedia tools and applications, 75, pages6809–6827(2016)	2016
A new secure and sensitive image encryption scheme based on new substitution with chaotic function	Z Parvin, H Seyedarabi, M Shamsi	Springer- Multimedia tools and applications, 75, pages10631–10648(2016)	2016
Combination of high-level features with low-level features for detection of pedestrian	F Takarli, A Aghagolzadeh, H Seyedarabi	Springer_ Signal, Image and Video Processing, 10, pages93–101(2016)	2016
A new method for edge detection based on Matching Pursuit	A Abbaszadeh, S Daneshvar, H Seyedarabi,	International Journal of Advanced Biotechnology and Research (IJBR)-2016	2016
Video-based face recognition in color space by graph-based discriminant analysis	S Shafeipour Yourdeshahi, H Seyedarabi, A Aghagolzadeh	Journal of AI and Data Mining- Vol 4, No 2, 2016.	2016

A robust Bayesian inference based channel estimation in power line communication systems contaminated by impulsive noise	M Asadpour, BM Tazehkand, H Seyedarabi	Turkish Journal of Electrical Engineering & Computer Sciences-(2016) 24: 2865- 2880	2016
Video based Face Recognition Using Orthogonal Locality Preserving Projection	YS SHAFEIPOUR, H Seyedarabi, A Aghagolzadeh	SIGNAL AND DATA PROCESSING 2016 , Volume - , Number 2 (SERIAL 28); 139-149.	2015
Application of Combined Local Object Based Features and Cluster Fusion for the Behaviors Recognition and Detection of Abnormal Behaviors	A. Feizi, A. Aghagolzadeh, H. Seyedarabi	International Journal of Engineering 28 (11), 1597-1604	2015
Face recognition using Eigenfaces: Effect of the different SVM core functions	PS Gharamaleki, H Seyedarabi	Int. Arch. Appl. Sci. Technol. 6 (2), 25-33	2015
Face recognition using Eigen faces, PCA and support vector machines	PS Gharamaleki, H Seyedarabi	European Journal of Applied Engineering and Scientific Research 4 (3), 24-30	2015
Jointly RVM Based Channel Estimation and PAPR Reduction Using Modified Tabu Search Algorithm in Power Line Communication Systems	M Asadpour, FA Ajhiri, BM Tazehkand, MH Seyedarabi	Springer Wireless Personal Communications-84, pages2757–2775(2015)	2015
A Comparative Study on Pre-processing Techniques in Diabetic Retinopathy Retinal Images: Illumination Correction and Contrast Enhancement	SH Rasta, ME Partovi, H Seyedarabi, A Javadzadeh	Journal of Medical Signals & Sensors, January 2015, 5(1):40-48	2015
Target localization using cooperative unmanned aerial vehicles	A Pirshayan, H Seyedarabi, S Haghipour	Advances in Computer Science: An International Journal 3 (4), 68-73	2014
Cooperative Machine-Vision-Based Tracking using Multiple Unmanned Aerial Vehicles	A Pirshayan, H Seyedarabi, S Haghipour	Advances in Computer Science_ an International Journal, 2014	2014
Appearance-based Face Recognition in Video Sequences	S Shafeipour Yourdeshahi, H Seyedarabi, A Aghagolzadeh	Tabriz Journal of Electrical Eng., vol. 45, no. 2	2014
Surveying the Ratio of Conformity in Surface Orientation and Human Vision Trailing to Recognize Image Base on Gestalt Psychology	N Kolehini Mamaghani, M Seyedarabi, H Nasser Al Islami	Honar-Ha-Ye Ziba Honar-Ha-Ye Tajassomi Vol. 18, No. 4, pp75-84	2014
Vision-based row detection algorithms evaluation for weeding cultivator guidance in lentil	Hossein Behfar, Hamid Reza Ghasemzadeh, Ali Rostami, M Seyedarabi, Mohammad Moghaddam	Modern Applied Science 8 (5), 224-232	2014
Fusing the information in visible light and near-infrared images for iris recognition	F Shamsafar, H Seyedarabi, A Aghagolzadeh	Springer- Machine Vision and Applications, 25:881–899	2014
Face recognition using Gabor-based direct linear discriminant analysis and support vector machine	S Meshgini, A Aghagolzadeh, H Seyedarabi	Elsevier Journal of Computers & Electrical Engineering, Vol 39, pp 727-745	2013
Study on an Automatic Sorting System for Date Fruits	Razieh Pourdarbani, Hamid Reza Ghassemzadeh, Hadi Seyedarabi, Fariborz Zaare Nahandi, Mohammad Moghaddam Vahed	Elsevier Journal of the Saudi Society of Agricultural Sciences	2013
Discriminant Analysis Between Myocardial Infarction Patients and Healthy Subjects using Wavelets Transformed Signal averaged ECG and PNN.	A Keshtkar, H Seyedarabi, P Sheikhzadeh, SH Rasta	Journal of Medical Signals & Sensors, Vol. 3 No.4	2013
Physical Properties of Iranian Berhi Date at Different Stages of Maturity	Razieh Pourdarbani, Hamid Reza Ghassemzadeh, Hadi Seyedarabi, Fariborz Zaare Nahandi, Mohammad Moghaddam Vahed	Sustainable Agriculture Research, Vol. 1, No. 2	2012

Contourlet Transform for Iris Image Segmentation	B Zali-Vargahan, MC Amirani, H Seyedarabi	International Journal of Computer Applications, Vol. 60 No.10	2012
The Effect of Camera and Light Source Characteristics on Image Quality in Machine Vision Application in Food Industry	Razieh Pourdarbani, Hamid Reza Ghassemzadeh, Hadi Seyedarabi, Fariborz Zaare Nahandi, Mohammad Moghaddam Vahed	Journal of Agricultural Science (JAS), Vol. 4, No. 10	2012
A Modified Fuzzy C-Means Clustering with Spatial Information for Image Segmentation	H Shamsi, H Seyedarabi	International Journal of Computer Theory and Engineering, Vol. 4, No. 5,	2012
Facial Features Tracking Using Auxiliary Particle Filtering and Observation Model Based on Bhattacharyya Distance	F Shirinzadeh, H Seyedarabi, A Aghagolzadeh	International Journal of Computer Theory and Engineering, Vol. 4, No. 5,	2012
Face Recognition Using Gabor Filter Bank, Kernel Principle Component Analysis and Support Vector Machine	S Meshgini, A Aghagolzadeh, H Seyedarabi	International Journal of Computer Theory and Engineering, Vol. 4, No. 5,	2012
Potato surface defect detection in machine vision System	R Hassankhani, H Navid, H Seyedarabi	African Journal of Agricultural Research Vol. 7(5) , 844-850	2012
Merged Clustering Imperialists Algorithm (MCIA)	MA Soltani-Sarvestani, SN Mazloumi, H Seyedarabi	International Journal of Information and Electronics Engineering, Vol. 2, No. 1,	2012
Multi-Focus Image Fusion for Visual Sensor Networks in DCT Domain	MBA Haghighat, A Aghagolzadeh, H Seyedarabi	Elsevier Journal of Computers & Electrical Engineering, Vol.37,pp 789-797	2011
A non-reference image fusion metric based on mutual information of image features	MBA Haghighat, A Aghagolzadeh, H Seyedarabi	Elsevier Journal of Computers & Electrical Engineering, Vol.37,pp 744-756	2011
A New Modifies Spatial FPCM that Incorporates the Spatial Information into the Membership Function to Improve the Segmentation Results	H Shamsi, H Seyedarabi	International Journal of Advanced Science and Technology-IJAST	2011
MRI Image Segmentation Based on New Fuzzy C-means Algorithm	H Shamsi, H Seyedarabi, S Erfani	International Journal on Computer Science and Engineering- IJCSE	2011
A Fast Algorithm for Recognition of Basic Facial Expressions with Gabor Filter Bank	H Seyedarabi, S Fazli, R Afrouzian	International Journal of Engineering Science and Technology -IJEST	2011
Analysis and Synthesis Facial Expressions by Feature-Points Tracking and Deformable Model	H Seyedarabi, A Aghagolzadeh, S Khanmohammadi, E Kabir	Journal of Iran Association Of Electrical And Electronic Engineering (IAEEE),Vol. 4, No.1, pp 11-19,	2007
Facial Expressions Recognition in a Single Static as well as Dynamic Facial Images using Tracking and Probabilistic Neural Networks,	H Seyedarabi, Won-Sook Lee, A Aghagolzadeh, S Khanmohammadi	Springer Lecture Notes on Computer Science (LNCS), Vol. 4319/2006, pp. 292-304,	2006
Feature-Based Facial Expression Recognition from Image Sequences using RBF Neural Networks and Fuzzy Inference System (in Farsi)	H Seyedarabi, A Aghagolzadeh, S Khanmohammadi,	Journal of Faculty of Engineering, University of Tabriz, Vol. 33, No.1	2006
Tracking and classification of Action Units in Facial Expressions using Hybrid Tracking System and Probabilistic Neural Networks	H Seyedarabi, Won-Sook Lee, A Aghagolzadeh, S Khanmohammadi	WSEAS Transactions on Signal Processing, Issue 5, Vol. 2	2006
Facial Expressions Animation and Lip Tracking Using Facial Characteristic Points and Deformable Model,	H Seyedarabi, A Aghagolzadeh, S Khanmohammadi,	International Journal of Information Technology (IJIT), Vol. 1, No. 4	2004

C: Conference Papers

Title of Paper	Authors	Place of Publication	Date of Publication
Autonomous, Bio-inspired vision-based navigation system for indoor flying using hybrid optical flow and stereopsis methods	Masoud Mohtadifar Hadi Seyedarabi	30th Iranian Conference on Electrical Engineering (ICEE2022)	2022
A New Unsupervised Feature Learning Method for Object Recognition using Prior-Knowledge Data	Ashkan Farrokhi Hadi Seyedarabi	30th Iranian Conference on Electrical Engineering (ICEE2022)	2022
Hybrid navigation based on GPS data and SIFT-based place recognition using Biologically-inspired SLAM (Accepted)	S Salimpour, H Seyedarabi, J Musevi Niya	11th International Conference on Computer Engineering and Knowledge (ICCCKE2021)	2021
The effect of electrode shapes at tDCS in study of stroke patients	M Khorrampanah, H Seyedarabi	28th Iranian Conference on Electrical Engineering (ICEE2020)	2020
Increasing the efficiency of the Lesion segmentation tools to detect brain lesions in stroke	M Khorrampanah, A Amani, M Yousefian, H Seyedarabi	28th Iranian Conference on Electrical Engineering (ICEE2020)	2020
A comparison study of automated approaches for brain lesions segmentation in ischemic stroke	M Yousefian, A Amani, H Seyedarabi, M Farhoudi	28th Iranian Conference on Electrical Engineering (ICEE2020)	2020
Disparity improvement of brain tissues after MRI segmentation in tDCS rehabilitation	M Yousefian, A Amani, H Seyedarabi, M Farhoudi	28th Iranian Conference on Electrical Engineering (ICEE2020)	2020
Energy efficient sensor selection method in cooperative spectrum sensing with low complexity	NV Barazande, R Abdoolee, BM Tazehkand, H Seyedarabi	WTS 2018: Wireless Telecommunications Symposium	2018
CT and MRI Image Fusion Based On 2-D Hilbert Transform	M Haddadpour, S Daneshvar, H Seyedarabi	2 nd NCEEBE1-2017-Mashhad	2107
Quality Aware HEVC Video Transmission Over Wireless Visual Sensor Networks	M Abdollahzadeh, HA Ghazijahani, H Seyedarabi	24th Iranian Conference on Electrical Engineering (ICEE2016)	2016
Multi-focus Image Fusion for Visual Sensor Networks	M Abdollahzadeh, T Malekzadeh, H Seyedarabi	24th Iranian Conference on Electrical Engineering (ICEE2016)	2016
Continuous Hidden Markov Model Based Dynamic Persian Sign Language Recognition	SG Azar, H Seyedarabi	24th Iranian Conference on Electrical Engineering (ICEE2016)	2016
Adaptive CSK Modulation Guaranteeing HEVC Video Quality Over Visible Light Communication	HA Ghazijahani, M Abdollahzadeh, H Seyedarabi, MJM Niya	8th International Symposium on Telecommunications (IST'2016)	2016
New method robust video coding based on compressive sensing	V Kazemi, H Seyedarabi, A Aghagolzadeh	9th Iranian Conference on Machine Vision and Image Processing (MVIP2015)	2015
A Novel Fast Search Motion Estimation Algorithm In Video Coding	SR Alvar, M Abdollahzadeh, H Seyedarabi	IEEE International Symposium on Industrial Electronics, ISIE 2014, Istanbul, Turkey	2014
Evaluation Criteria of Biological Artifacts Removal Rate from EEG Signals	A Jafarifarmand, MA Badamchizadeh, H Seyedarabi	IEEE International Symposium on Industrial Electronics, ISIE 2014, Istanbul, Turkey	2014
Effect of Vibrate Materials on Laser Recorded Vibration Signals (in Farsi)	S Molaei, S Ahmadi, H Seyedarabi	The Second Iranian Conference on Engineering Electromagnetics (ICEEM 2014)	2014

Multiview 3D reconstruction based on vanishing points and homography	M Karami, R Afrouzian, S Kasaei, H Seyedarabi	7th International Symposium on Telecommunications (IST'2014), 367-370	2014
Better detection of retinal abnormalities by accurate detection of blood vessels in retina	F Shami, H Seyedarabi, A Aghagolzadeh	22nd Iranian Conference on Electrical Engineering (ICEE2014), 1493-1496	2014
Multifocus image fusion based on compressive sensing for visual sensor networks	V Kazemi, H Seyedarabi, A Aghagolzadeh	22nd Iranian Conference on Electrical Engineering (ICEE2014), 1668-1672	2014
Detection and Tracking of Occluded Humans in Three-Camera Network	S Rahimi, A Aghagolzadeh, H Seyedarabi	International Conference on Robotics and Mechatronics-Tehran	2013
Real-time Dynamic Hand Gesture Recognition using Hidden Markov Models	MM Gharasuie, H Seyedarabi	8th Iranian Conference on Machine Vision and Image Processing (MVIP2013)	2013
Pedestrian Detection with Haar-Like Features and HOG using SVM (in Farsi)	E Mohammadi, H Seyedarabi, A Sakhavati	8th Iranian Conference on Machine Vision and Image Processing (MVIP2013)	2013
Image Data Clustering by Imperialist competitive algorithm (inFarsi)	N Mazloumi, H Seyedarabi	8th Iranian Conference on Machine Vision and Image Processing (MVIP2013)	2013
Human Detection and Tracking Using New Features Combination in Particle Filter Framework	S Rahimi, A Aghagolzadeh, H Seyedarabi	8th Iranian Conference on Machine Vision and Image Processing (MVIP2013)	2013
Using Optical Flow and Spectral Clustering for Behavior Recognition and Detection of Anomalous Behaviors	A Feizi, A Aghagolzadeh, H Seyedarabi	8th Iranian Conference on Machine Vision and Image Processing (MVIP2013)	2013
Securing the Iris Database Using Visual Cryptography and Substitution (inFarsi)	F Shamsafar, H Seyedarabi, A Aghagolzadeh	21st Iranian Conference on Electrical Engineering (ICEE2013)	2013
Three Camera-Based Human Tracking Using weighted Color and Cellular LBP histograms in a Particle Filter Framework	S Rahimi, A Aghagolzadeh, H Seyedarabi	21st Iranian Conference on Electrical Engineering (ICEE2013)	2013
Automatic Centerline Extraction of Coronary Arteries in Computed Tomography Angiography Images	M Berenjkoub, H Seyedarabi, S Sadri	21st Iranian Conference on Electrical Engineering (ICEE2013)	2013
Robust Pedestrian Detection Using Low Level and High Level Features	F Takarli, A Aghagolzadeh, H Seyedarabi	2013 21st Iranian Conference on Electrical Engineering (ICEE), 1-6	2013
Hybrid Method for Hand Gesture Recognition Based on Combination of Haar-Like and HOG Features	S Ghafouri, H Seyedarabi	2013 21st Iranian Conference on Electrical Engineering (ICEE), 1-6	2013
Behavior Recognition and Anomaly Behavior Detection Using Clustering	A Feizi, A Aghagolzadeh, H Seyedarabi	6th International Symposium on Telecommunications (IST), 892-896	2012
Improved Particle Filtering Algorithm For Maneuvering Object Tracking Using Deformation Detection	MJ Parseh, S Pashazadeh, H Seyedarabi	2nd International eConference on Computer and Knowledge Engineering (ICCKE)	2012
Securing Database of Biometric Systems	F Shami, F Shamsafar, H Seyedarabi	9th International ISC Conference on Information Security and Cryptology	2012
Tracking of Face Features and Simulating on a ROBOFACE (in Farsi)	SSA Jalili, H Seyedarabi, S Haghipour	2 nd National Conference on Software Engineering- Lahijan	2012
Particle Filter Based Tracking of Facial Features Enhanced by Symmetrical Mask In Presence of Occlusion	Mohammadreza Nikfard, Hadi Seyedarabi, Ali Aghagolzadeh	Mosharaka International Conference on Systems, Modeling and DesignMIC-SMD2012,Turkey	2012
Fusion of Visual and Infrared Signals in	S Ghaeminejad, A Aghagolzadeh,	20th Iranian Conference on	2012

Visual Sensor Network for Night Vision	H Seyedarabi	Electrical Engineering (ICEE2012), 1232-1237	
Facial Features Tracking Using Auxiliary Particle Filtering and Observation Model Based on Bhattacharyya Distance	F Shirinzadeh, H Seyedarabi, A Aghagolzadeh	IEEE International Conference on Information and Computer Applications ICICA 2011, Dubai	2011
A Modified Fuzzy C-Means Clustering with Spatial Information for Image Segmentation	H Seyedarabi, H Shamsi, E Borzabadi, M Shamsi	IEEE International Conference on Information and Computer Applications ICICA 2011, Dubai	2011
Automatic Face Recognition using Gabor Filters, Kernel Principle Component Analysis and Support Vector Machine	S Meshgini, A Aghagolzadeh, H Seyedarabi	IEEE International Conference on Information and Computer Applications ICICA 2011, Dubai	2011
A modified FCM algorithm for MRI brain image segmentation	A Kouhi, H Seyedarabi, A Aghagolzadeh	7th Iranian Conference on Machine Vision and Image Processing	2011
Tracking and Occlusion Handling in Multi- Sensor Networks by Particle Filter	H Rezaee, A Aghagolzadeh, MH Seyedarabi, S Al Zu'bi	IEEE GCC Conference and Exhibition (GCC) Dubai	2011
Fiducial Facial Points Tracking Using Particle Filter and Geometric Features	S Fazli, R Afrouzian, H Seyedarabi	IEEE International Congress on Ultra Modern Telecommunications and Control Systems, IEEE ICUMT 2010, Moscow, Russia	2010
Vehicle Tracking in Multi- Sensor Networks by Fusing Data in Particle Filter Framework	H Rezaee, A Aghagolzadeh, H Seyedarabi	IEEE Asia Pacific Conference on Circuits and Systems (IEEE-APCCAS 2010), Malaysia	2010
Vehicle Tracking by Fusing Multiple Cues in Structured Environments Using Particle Filter	H Rezaee, A Aghagolzadeh, H Seyedarabi	IEEE Asia Pacific Conference on Circuits and Systems (IEEE-APCCAS 2010), Malaysia	2010
Facial Feature Tracking using Particle Filter (in Farsi)	F Shirinzadeh, H Seyedarabi, A Aghagolzadeh	2010 6th Iranian Conference on Machine Vision and Image Processing (MVIP2010)	2010
Block-Based Image Error Concealment Using Fragile Watermarking in Error-Prone Channels	R Keshavarzian, A Aghagolzadeh, H Seyedarabi, JM Niya	2010 6th Iranian Conference on Machine Vision and Image Processing (MVIP2010)	2010
Multiview Human Tracking using Particle Filter (in Farsi)	A. Feizi, A. Aghagolzadeh, H. Seyedarabi	2010 6th Iranian Conference on Machine Vision and Image Processing (MVIP2010)	2010
Real-Time Fusion of Multi-Focus Images for Visual Sensor Networks	MBA Haghighat, A Aghagolzadeh, H Seyedarabi	2010 6th Iranian Conference on Machine Vision and Image Processing (MVIP2010)	2010
Face classification using DCT Coefficients (in Farsi)	MBA Haghighat, H Seyedarabi, A Aghagolzadeh	2010 6th Iranian Conference on Machine Vision and Image Processing (MVIP2010)	2010
High Precision PSO and FLS Integrated Method for Facial Landmark Localization	S Khanmohammadi, SM Bakhshmand, H Seyedarabi	Fuzz-IEEE 2009, 2009 IEEE International Conference on Fuzzy systems Korea	2009
Multi-pose Head Tracking using Color and Edge Features Fuzzy Aggregation for Driver Assistant System	H Seyedarabi, SM Bakhshmand, S Khanmohammadi	IEEE International Conference on signal & Image processing applications, ICSIPA09, Malaysia	2009
A Combined KPCA and SVM Methods for Basic Emotional Expressions Recognition	S Fazli, R Afrouzian, H Seyedarab	IEEE 2nd International Conference on Machine Vision (ICMV 2009) , Dubai, UAE	2009
High- Performance Facial Expression Recognition Using Gabor Filter and	S Fazli, R Afrouzian, H Seyedarabi	IEEE International Conference on Intelligent Computing and	2009

Probabilistic Neural Networks		Intelligent Systems (ICIS 2009), Shanghai, China	
Pedestrian Detection in Image sequences (in Farsi)	Z Bounic, A Aghagolzadeh, H Seyedarabi	17th Iranian Conference on Electrical Engineering (ICEE2009),	2009
Face Detection Using Face Colour Features (in Farsi)	E Namjoo, A Aghagolzadeh, H Seyedarabi, MS Moin	15th Iranian Conference on Electrical Engineering (ICEE2007),	2007
Facial Expressions Recognition in Static and Dynamic Images Using Transient and Intransient Facial Features by Probabilistic Neural Networks (in Farsi)	H Seyedarabi, A Aghagolzadeh, Won-Sook Lee, S Khanmohammadi	15th Iranian Conference on Electrical Engineering (ICEE2007),	2007
Facial Features Detection in Image (in Farsi)	F Shahjooei, A Aghagolzadeh, H Seyedarabi, MS Moin	The 4th Iranian Conference on Machine Vision and Image processing (MVIP2007)	2007
Multiview Face Detection (in Farsi)	SR Mohanna, A Aghagolzadeh, H Seyedarabi, MS Moin	The 4th Iranian Conference on Machine Vision and Image processing (MVIP2007)	2007
Automatic Lip Tracking and Action Units Classification Using Two-Step Active Contours and Probabilistic Neural Networks	H Seyedarabi, Won-Sook Lee, A Aghagolzadeh,	IEEE Canadian Conference on Electrical and Computer Engineering (CCECE2006) Ottawa, Canada.	2006
Classification of Upper and Lower Face Action Units and Facial Expressions using Hybrid Tracking System and Probabilistic Neural Networks	H Seyedarabi, Won-Sook Lee, A Aghagolzadeh, S Khanmohammadi	WSEAS-SIP'06-Istanbul, Turkey	2006
Facial Expressions Recognition in a Single Static as well as Dynamic Facial Images using Tracking and Probabilistic Neural Networks	H Seyedarabi, Won-Sook Lee, A Aghagolzadeh, S Khanmohammadi	IEEE -PSIVT2006 Taiwan	2006
Automatic Lip Tracking and Feature Points Detecting Using Novel Two-Step Active Contours (in Farsi)	H Seyedarabi, Won-Sook Lee, A Aghagolzadeh, S Khanmohammadi	14th Iranian Conference on Electrical Engineering (ICEE2006)	2006
Analysis and Synthesis of Facial Expressions using PNN Neural Networks and Face Deformable Model	H Seyedarabi, A Aghagolzadeh, S Khanmohammadi	13th Iranian Conference on Electrical Engineering (ICEE2005)	2005
Speech Animation Using lip deformable Model (in Farsi)	H Seyedarabi, A Aghagolzadeh, S Khanmohammadi	The 3rd Iranian Conference on Machine Vision and Image processing (MVIP2005)	2005
Facial Expressions Recognition from Image Sequences using Cross-correlation Based Optical-Flow and Radial Basis Neural Networks(in Farsi)	H Seyedarabi, A Aghagolzadeh, S Khanmohammadi	12th Iranian Conference on Electrical Engineering (ICEE2004)	2004
Single and Composite Action Units Classification in Facial Expressions by Feature-Points Tracking and RBF Neural Networks	A Aghagolzadeh, H Seyedarabi, S Khanmohammadi	Ukrainian Int. conf. signal/Image processing, UkrObraz 2004, 181-184	2004
Recognition of Six Basic Facial Expressions by Feature-Points Tracking using RBF Neural Networks and Fuzzy Inference System	H Seyedarabi, A Aghagolzadeh, S Khanmohammadi	IEEE International Conference on Multimedia and Expo ICME2004), Taipei, Taiwan	2004
Facial Expressions Recognition from Static Images using Neural Networks and Fuzzy logic	H Seyedarabi, A Aghagolzadeh, S Khanmohammadi	The 2nd Iranian Conference on Machine Vision and Image processing (MVIP2003)	2003

Early Diagnosis of Coronary Artery Disease from Time-Frequency Features of ECG signals using Wigner-Ville Transform and RBFN (in Farsi)	MA Tinati, H Seyedarabi	13th Iranian Conference on Electrical Engineering (ICEE2002)	2002
Sinusoidal Modelling of Speech Signals with Pitch Period Estimation from Periodogram (in Farsi)	H Seyedarabi, H Asjodi	6th Iranian Conference on Electrical Engineering (ICEE1998).	1998

Language Proficiency:

Language	Degree of Proficiency											
	Writing				Reading				Speaking			
	Native	Good	Fair	Poor	Native	Good	Fair	Poor	Native	Good	Fair	Poor
English		X				X				X		
Persian	X				X				X			
Azeri	X				X				X			
Turkish		X				X				X		
Arabic			X			X					X	