

Curriculum Vitae



Dr. Shahla Azizi Alikamar

Personal Information

Date of Birth	09.09.1985
Nationality	Iranian, Resident of north Cyprus
Marital status	Married
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Professional Information

Affiliation	Assistant Professor, Department of Electrical & Electronic Engineering, Eastern Mediterranean University, Famagusta, North Cyprus
ResearchGate	www.researchgate.net/profile/Shahla-Azizi
Google Scholar	https://scholar.google.com/citations?user=X4NnRZ0AAAAJ&hl=en

Educational records

- *Ph.D. of Biomedical Engineering*, (August 2021)
Medical Physics and Biomedical Engineering Department, Tehran University of Medical Science, Tehran, Iran
Thesis: Prediction and quantitative evaluation of changes in descending pathways' structure and function induced by anti-gravity locomotor training in Children with Cerebral Palsy
- *Master of Biomedical Engineering*, (January 2012)
Department of Biomedical Engineering, Amirkabir University of Technology, Tehran, Iran
Thesis: Development of Computer-Aided speech therapy software using signal processing, modeling, and speech recognition.
- *Bachelor of Biomedical Engineering*, (January 2008)
Department of Biomedical Engineering, Amirkabir University of Technology, Tehran, Iran
Thesis: Modeling of Ganglion cell of the retina using NEURON Software 2

• *High School Diploma in Mathematics and Physics*, Shahed High School, Tehran, Iran, Sep. 1999 to Jun. 2003. GPA: 19.10/20

Research interests

Medical signal and image processing
Neuroimaging
Neuroscience
Neurorehabilitation
Machine learning
Speech Processing

Languages

Azerbaijani, Persian, English, Turkish

Working experiences

1. Lecturer at Islamic Azad University, Damavand Branch, Tehran, Iran: Physics (2012-2013)
2. Research assistant at Institute of Biomedical Engineering, University of New Brunswick, Fredericton, Canada (Sep 2020 – Sep 2021)
3. Assistant professor at Electric and Electronic Department, Eastern Mediterranean University (2021- present)

Research projects

1. Study of Telemedicine, Function of Radiology and Radiotherapy course, Spring 2005.
2. Study of The Electrosurgery, fall 2006.
3. Study of the Cybernetic Hand, fall 2006.
4. Study of the NEURON Software, fall 2011.
5. Estimation of ARMA Model Parameters using its MA Model, Discrete Signal Processing course, spring 2011.
6. Modeling CPG using Sensor Feedbacks, Human Motor Control course, winter 2011.
7. Development of Computer-Aided speech therapy software using signal processing, modeling, and speech recognition
8. Programming of the Intelligent System for Screening of Congenital Heart Diseases, Hooshmand Asia Group, 2012 and 2013.
9. Prediction and quantitative evaluation of changes in descending pathways structure and function induced by anti-gravity locomotor training in Children with Cerebral Palsy, 2014 – 2019
10. Prediction and quantitative evaluation of changes in descending pathways structure and function induced by repetitive transcranial magnetic stimulation (rTMS) in Children with Cerebral Palsy, 2014 – 2019

11. Extraction of research papers' data using Originlab software, spring 2020
12. Prediction of knee spasticity grade using machine learning tools, summer 2020
13. Prediction of progression of mild cognitive impairment to dementia, Sep 2020- Sep 2021

Thesis supervised (M. Sc.)

1. A. Sadeghi, Diagnosis of Parkinson disease using EEG data and machine learning methods, Eastern Mediterranean University (In progress).
2. Abdurrahman Idris, development of an automatic power saver using EEG data, Eastern Mediterranean University (In progress).

Published books (in Persian)

1. M. Shahedi Asl and **S. Azizi**, History of Metallurgy (ISBN: 978-600-5210-81-1), Arta Research Co. & Hampa, Tehran, Iran, 2012.

Papers (in English)

1. **S. Azizi**, N. Bressan, A. Sexton, C. O'Connell, C. McGibbon, "*Prediction of knee spasticity based on supervised machine learning tools using electromyography signal and BioTone data during pendulum test*", Submitted.
2. **S. Azizi**, A. Irani, A. Shahrokhi, M. Soleymani, M.M. Mirbagheri, "*The effects of antigravity treadmill (Alter-G) training on walking capacity, hyperexcitability of reflex, and corticospinal and corticoreticular tracts structure in children with cerebral palsy*", under review in European Journal of Pediatric Neurology.
3. E. R. Niari, M. Vajdi, M. Sakkaki, **S. Azizi**, F. S. Moghanlou, M. S. Asl, "*Finite element simulation of disk-shaped HfB₂ ceramics during spark plasma sintering process*", International Journal of Applied Ceramic Technology, 2022
4. **S. Azizi**, A. Irani, A. Shahrokhi, E. Rahimian, M.M. Mirbagheri, "*Contribution of altered corticospinal microstructure to gait impairment in children with Cerebral Palsy*", Clinical Neurophysiology, 2021
5. **S. Azizi**, A. Irani, A. Shahrokhi, Kh. Meydanlou, M.M. Mirbagheri, "*Investigating the contribution of the corticoreticular tract to walking capacity in children with cerebral palsy*", Journal of Biomedical Physics and Engineering, 2021
6. F. S. Moghanlou, M. Vajdi, M. Sakkaki, **S. Azizi**, "*Effect of graphite die geometry on energy consumption during spark plasma sintering of zirconium diboride*", Synthesis and Sintering, 2021
7. **S. Azizi**, P. M. Birgani, A. Irani, A. Shahrokhi, R. Nourian, M.M. Mirbagheri, "*Impact of anti-gravity locomotion (AlterG) training on structure and function of corticospinal tract and gait in children with cerebral palsy*", 41th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2019
8. **S. Azizi**, P. M. Birgani, H. Marzbani, R. Nourian, M. Kohanpour, M. M. Mirbagheri, "*Assessment of neuroplasticity of corticospinal tract induced by antigravity treadmill (AlterG) in*

- cerebral palsy children*", 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2018
9. **S. Azizi**, A.H. Rasooli, M. Soleimani, A. Irani, A. Shahrokhi, M.M. Mirbagheri, "*The impact of AlterG training on balance and structure of vestibulospinal tract in cerebral palsy children*", 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2018
10. **S. Azizi**, H. Marzbani, S. Raminpard, P. M. Birgani, A. H. Rasooli, M. M. Mirbagheri, "*The impact of an anti-gravity treadmill (AlterG) training on walking capacity and corticospinal tract structure in children with cerebral palsy*" 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2017
11. A. H. Rasooli, P. M. Birgani, **S. Azizi**, A. Shahrokhi, M. M. Mirbagheri, "*Therapeutic effects of an anti-gravity locomotor training (AlterG) on postural balance and cerebellum structure in children with Cerebral Palsy*", International Conference on Rehabilitation Robotics (ICORR), 2017
12. H. Marzbani, S. Parvin, S. Amiri, M. Lotfian, M. R. Kharazi, **S. Azizi**, M. M. Mirbagheri, "*The correlation between transcranial magnetic stimulation parameters and neuromuscular properties in children with cerebral palsy*", 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2016
13. **S. Azizi**, F. Towhidkhah, F. Almasganj, "*Study of VTLN method to recognize common speech disorders in speech therapy of Persian children*", 19th Iranian Conference on Biomedical Engineering ICBME 2012, Tehran, Iran, Fall 2012

Papers (in Persian)

1. **S. Azizi**, F. Towhidkhah, F. Almasganj, F. Torabinejad, "*Acoustic Analysis of Persian Vowels and Comparison of them in Children and Adults*", 18th Iranian Conference on Biomedical Engineering ICBME 2011, Tehran, Iran, fall 2011 (In Persian).
2. **S. Azizi**, F. Towhidkhah, F. Almasganj, F. Torabinejad, Y. Shekofteh, "*Children's Speech Recognition using HMM and HTK to Speech Therapy and Speech Disorder Realization*", 17th National Conference on Computer Engineering, Tehran, Iran, winter 2012, (In Persian).
3. **S. Azizi**, F. Towhidkhah, F. Almasganj, "*Study of VTLN method to recognize common speech disorders in speech therapy of Persian children*", Iranian Journal of Biomedical Engineering, 2013 (In Persian)
4. **S. Azizi**, F. Towhidkhah, F. Almasganj, "*Recognize Similar Words using MLLR Method to Speech Therapy of Children*", 4th Conference on Information Technology and Science ICT 2012, Babol, Iran, Spring 2012, (In Persian).

Invited Speaker

- International Conference on Nuclear Technology, Radiation Safety and Advanced Technological Research (ICNRA2021)

Professional membership

- Iranian Society of Biomedical engineers (ISBME)

Journal Referee

- Journal of Advanced Research (*Elsevier*)
- Synthesis and Sintering (*Synsint Research Group*)
- Journal of Composites and Compounds (*JCC Research Group*)
- Neuroscience Letters (*Elsevier*)

Computer skills

1. Higher-level programming language: C#, Android, Java
2. Engineering Software: Matlab, Orcad
3. Statistical Software: SPSS, Minitab
4. Neuroimaging software: ExploreDTI, Trackvis, DSISTUDIO, DTISTUDIO
5. Others: MS-OFFICE (WORD, EXCEL, POWERPOINT), Adobe Photoshop, InDesign

Clinical skills

1. Repetitive Transcranial Magnetic stimulation
2. Transcranial Magnetic stimulation
3. Clinical evaluation of walking capacity
4. Hofmann reflex
5. Electroencephalography
6. Functional near infrared spectroscopy

References

- Prof. Mehdi M Mirbagheri (Tehran University of Medical Science, Tehran, Iran, E-mail: Mehdi.northwestern@gmail.com)
- Prof. Farzad Towhidkhah, (Amirkabir University of Technology, Tehran, Iran, E-mail: Towhikhah@aut.ac.ir)
- Prof. Ashkan Irani (Shahid Beheshti University, Iran, E-mail: ashkan2579@yahoo.com)