Amirsalar Mansouri

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Education

Ph.D. in Electrical and Computer Engineering, ***2014–2021***
Department of Electrical & Computer Engineering, University of Nebraska- Lincoln, Lincoln, NE, USA

B.Sc. in Electronic Engineering, ***2009–2013***
School of Electrical & Electronic Engineering, Iran University of Science & Technology, Behshahr, Iran

Research Interests

- **Signal Processing**
- **Machine Learning**
- **M/EEG (Biomedical signals)**
- **Bioinformatics**
- **Data mining**
- **RNA-seq Analysis**

Professional Experience

Postdoctoral Research Fellow, At DICoN lab, Dr. Tony Wilson. ***Winter 2022 – present***
Institute for Human Neuroscience, Boys Town National Research Hospital,
Topics: MEG analysis, Genome-wide association analysis

- Preprocessing and analyzing MEG signals.
- Investigating the reliability of a three-year longitudinal task-based MEG dataset.
- Pattern recognition of Neuropsychological assessments of drug users according to the unsupervised clusters of their drug substance symptoms.
- Preprocessing and quality control of genotypic samples.
- Analyzing genotypes and their association with cognitive scores and brain oscillatory characteristics.
- Realtime tDCS effects on participants behaviors performances.

Research Assistant, Advisor Prof. Khalid Sayood. ***Fall 2014 – Fall 2021***
Department of Electronic Engineering, University of Nebraska- Lincoln,
Topics: EEG analysis especially pattern recognition of states of brain transitions, RNA-Seq analysis

- Seizure Detection and Localizations using EEG signals by modeling the preictal to ictal EEG signals alterations.
- Network-based pattern recognition seizure localization in the frequency domain.
- Unsupervised detection of a recent concussive injury impacts using a novel network-based monitoring approach.
- BCI pattern recognition and built a generalized classifier model of brain responses to different trials.
- Preprocessing and quality control and maintaining of RNA-seq samples.
- Analyzing human and viral genome expression to explore significant markers.
- Associated pathway analysis of differentially expressed genes.

Research Assistant, at AACT lab, Dr. Kevin Pitt. ***Fall 2020 – Fall 2021***
College of Education and Human Sciences, University of Nebraska- Lincoln,

- Collecting and processing EEG data and maintaining database
- Classifying the stimulated conditions by feature extraction in time and frequency domains.
- Modeling electrodes connectivity using Network-based pattern recognitions.

Graduate Teaching Assistant, ***Fall 2014 - Fall 2021***
Department of Electrical and Computer Engineering Department, University of Nebraska- Lincoln,
More than 300 hours of one-on-one tutoring undergraduate students
Conducting undergraduate labs and assisting instructors for following courses

ELEC 211 (Elements of Electrical Engineering I)
ECEN 220 (Introduction to Embedded systems)
ELEC 222 (Introduction to Embedded Systems)
ECEN 307 (Electrical Engineering Laboratory I- Lab)
ECEN 216 (Electronics and Circuits II)
ECEN 231 (Electrical Circuits I- Lab)
ECEN 304 (Signals and Systems I)
ELEC 462 (Communication Systems)

Upward Bound Math Science ***Summer 2015***

Teaching Robotics, introduction to electronics and the microcontroller and robotics.

Research Assistant, Electronic Laboratory, Dr. Ali Kermani. ***2013 – Spring 2014***

Department of Electronic Engineering, Iran University of Science & Technology,
Measuring of Mind's Awareness,

- Design circuit for collecting, amplifying, and filtering brain signals
- Processing and classifying awareness level

Simulating, Designing and Implementation of ECG Signals Analyzer, Dr. Ghonoudi ***Spring 2012***

Publications

- Mansouri, Amirsalar, Sanjay Singh, and Khalid Sayood. "**Hierarchal Online Temporal and Spatial EEG Seizure Detection.**" 2017 *IEEE International Conference on Electro Information Technology* (*EIT*) (May 2017). doi:10.1109/eit.2017.8053397.
- Mansouri, Amirsalar, Sanjay P. Singh, and Khalid Sayood. "**Online EEG Seizure Detection and Localization.**" *Algorithms* 12.9 (2019): 176. doi.org/10.3390/a12090176
- Kong, Xiaohong and Li, Dongmei and Mansouri, Amirsalar and Kang, Guobin and Sayood, Khalid and West, John and Wood, Charles. 2021. "**Bone Marrow Derived SH-SY5Y Neuroblastoma Cells Infected by Kaposi's Sarcoma Herpes Virus (KSHV) Display Unique Infection Phenotypes and Growth Properties.**" *Journal of Virology* (American Society for Microbiology Journals). doi:10.1128/JVI.00003-21
- Mansouri, Amirsalar and Ledwidge, Patrick and Sayood, Khalid and Molfese, Dennis. "**A Routine Electroencephalography Monitoring System for Automated Sports-Related Concussion Detection.**" *Neurotrauma Reports* (2021). doi.org/10.1089/neur.2021.0047
- Kevin M. Pitt, Amirsalar Mansouri, Yingying Wang, Joshua Zosky. **"Toward P300 Brain-Computer Interface Access to Contextual Scene Displays for AAC: An Initial Exploration of Context and Asymmetry Processing in Healthy Adults."** *Neuropsychologia* (2022) doi.org/10.1016/j.neuropsychologia.2022.108289
- Mansouri, Amirsalar and Pitt, Kevin and Sayood, Khalid (2022). **Toward a generalized network-based model to support brain-computer interface applications (*in preparation*)**

Conferences/Workshops

2019 UNL Research Fair graduate session	April 2019
2018 Midwest Big Data Summer School	July 2018
Workshop on NGS Data Analysis, MASTERING RNA-SEQ	April 2018
2017 American Epilepsy Society Annual Meeting (AES)	December 2017
2017 IEEE International Conference on Electro Information Technology (EIT)	May 2017

Awards and Honors

UNL Research Fair graduate session ECE department 2nd place (April 2019).	***2019***
College of Engineering Graduate Student Conference Travel Grant.	***2017***
Member of the National Organization for Development of Exceptional Talents, Iran.	***2002-2009***
Ranked 2nd in Junior Soccer league Iran Open International RoboCup Competition, Tehran, Iran.	***2007***

Computer Skills

Programming Languages: MATLAB, Python (TensorFlow, NumPy, PyTorch, sklearn), R, C++, Assembly, Pascal, Basic, Familiar with C#, HTML, PHP

Circuit Simulation and Analysis: PSpice, Proteus (ISIS), CodeVision AVR, Arduino

CAD Software: AutoCAD, familiar with Corel Draw

Operating System: Microsoft Windows, Mac OS, and Familiar with Linux (Ubuntu)

Voluntary Activities

The Big Event, Lincoln NE	April 2017
Judging the UNL Research fair posters, Lincoln NE	April 2019
The Valley Flood relief, Valley Nebraska	April 2019
Walk to End Epilepsy, Lincoln NE	May 2019