MARYAM HOSSEINI

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PhD student at Université de Sherbrooke, my research interests lie in the field of computational neuroscience, machine learning and deep learning. I write codes in Python and MATLAB.

EXPERIENCE

iBIONICS

September 2018 - January 2019 Ottawa, Canada

In collaboration with Necotis lab, Université de Sherbrooke

- Design encoding/decoding models of the activity of retinal ganglion cells
- Explore the effects of simultaneously stimulating different ganglion cell types on the activity of these cells
- Study how changing the stimuli affects the reconstruction of the stimuli from the neural activity of ganglion cells
- Communication of the results to other team members

Sonic lab

January - August 2016 Minneapolis, United States

Department of Biomedical Engineering, Sonic lab

- Experiment and stimulus design
- Brain surgery and recording from different auditory structures of guinea pigs
- Work with complex and noisy neural data sets
- Statistical analysis of the data and encoding model design

Mashhad Power Plant

July-September 2009 Mashhad, Iran

- optimizing the cooling system of Mashhad power plant BBC2 transformator

PUBLICATIONS

Journal papers

Hosseini et al. "The effect of input noises on the activity of auditory neurons using GLM-based metrics", 2021 J. Neural Eng. https://doi.org/10.1088/1741-2552/abe979

Conferences

Hosseini et al. "The influence of noise on the spiking activity of inferior colliculus neurons under different stimulus levels and SNRs", 2018 SFN (Society for Neuroscience) meeting, San Diego, CA, Program No. 140.13., 2018. Online.

Hosseini et al. "Novel metrics to measure the effect of additive inputs on the activity of sensory system neurons", 2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Berlin, Germany, 2019, pp. 5141-5145.

Hosseini et al. "Effects of simultaneously stimulating different ganglion cell types with the same stimulation strategy in epiretinal implants", 2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Berlin, Germany, 2019, FrPOS-35.30 (poster presentation).

Hosseini et al. "Speaker-Independent Brain Enhanced Speech Denoising," 2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2021, pp. 1310-131. doi: 10.1109/ICASSP39728.2021.9414969.

SOFT SKILLS

Innovation | Communication | Teamwork | Flexibility | Self-management | Curiosity

PROFESSIONAL SKILLS

Machine learning	●●●●○
Python	●●●●○
Keras	●●●●○
MATLAB	●●●●●
EEG signal processing	●●●●○

EDUCATION

B.Sc. in Electrical Engineering with a major in control systems

Ferdowsi University of Mashhad, Mashhad, Iran

2006 - 2011

Thesis title: Simulation of Subspace Method for System Identification with MATLAB

M.Sc. in biomedical engineering - bio-electric

Amir Kabir University of Tehran, Tehran, Iran

2011 - 2014

Thesis title: Modeling Multiple Sclerosis by Simulation of Focal Demyelination

PhD in Electrical Engineering

Université de Sherbrooke, Sherbrooke, Canada

2015 - now

Thesis title: The development of encoding and decoding models of neural activity following the presentation of noisy sound mixtures

LANGUAGES

English	●●●●●
Farsi	●●●●●
French	●●●●○