Hamed Shabani

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Education

2017–2021	**Ph.D. in Computational Neuroscience**, *University of Tübingen*.
Dissertation	*Classifying retinal ganglion cells for bionic vision*
supervisor	Dr. Daniel Rathbun, Prof. Eberhard Zrenner (Collaboration with UNSW, Sydney)
tasks	Collected electrophysiology data of mouse retina and analyzed in Python and Matlab.
2013–2016	**M.S. in Biomedical Engineering**, *Shahed University*, Tehran, GPA=17.41 (out of 20).
Dissertation	*EEG signals chaotic behavior analysis in order to detect drowsiness*
supervisor	Dr. Mohammad Mikaili
tasks	Collected EEG data of human subjects and analysed with Matlab.
2009–2011	**B.S. in Electrical Engineering**, *Bahonar Technical College of Shiraz*, GPA=15.11 (out of 20).
Final poject	*Matlab compatible Electrocardiogram*

Research Experience

Oct 2019	**University of New South Wales**, *Sydney*, Visiting doctoral student.
	o Project 1: Comparing direct and indirect activation of retina ganglion cells in patch-clamp versus extracellular recording
	o Project 2: Noise correlation analysis of retina patch-clamp recordings for electrical stimulation
advisors	Dr. Mohit Shivdasani, Dr. Rathbun, Dr. Hosseinzadeh
tasks	Developed Matlab codes to analyze and visualize patch clamp recordings.
2015–2017	**Brain Engineering Center (IPM)**, *Tehran*, Research Assistant.
	o Project 1: Response variability in visual cortex
	o Project 2: Encoding pleasant and unpleasant expression of the architectural window shapes
advisor	Dr. Reza Lashgari (Collaboration with Alonso lab at State University of New York)
tasks	Analyzed human EEG and e-phys data recorded from non-human primates.

Teaching Experience

SS 2020	Mentoring Master students at HTWK Leipzig. Define, guide, and evaluation of the final projects of Pattern recognition course.
SS 2019	Mentoring Medtech Master students in Implantology course, Tübingen.

Workshops and Abstracts

Oct 3-5, 2021	*Eye and the chip conference.* Detroit, Michigan (Accepted as platform presentation).
Aug 2-21, 2021	**Online summer school**, *NeuroMatch Academy three weeks Deep Learning course*
Oct 12-14, 2020	**Online workshop**, *UCL Neuropixels Course*,
March 13, 2019	**Workshop**, *Research Funding and Grant Writing*, DZNE Tübingen.
Dec 28, 2016	**Workshop**, *Spike data analysis*, Neuroscience Research Center,Shahid Beheshti University of Medical Sciences, Tehran, Iran.
Dec 13-14, 2019	**Oral presentation**, MEA-based classification of retinal ganglion cells for bionic vision, Shabani H, Sadeghi M, Hosseinzadeh M, Zrenner E, Rathbun D. *Artificial vision Conference*, Aachen, Germany (Travel Award).

Sep 17-22, 2019	**Poster presentation**, Multi-Electrode recording for classification of retinal ganglion cells for bionic vision, Shabani H, Sadeghi M, Hosseinzadeh Z Zrenner E Rathbun D., *Bernstein Conference*, Berlin, Germany.
April 27, 2019	**Poster presentation**, *Multi-Electrode recording for classification of retinal ganglion cells for bionic vision*, Shabani H, Sadeghi M, Hosseinzadeh Z Zrenner E Rathbun D., Arvo Conference, Vancouver, Canada (Travel grant).
March 7, 2018	**Poster presentation**, New Horizons in Vision and Hearing Research symposium, Physiological Classification of Mouse Retinal Ganglion Cells for Retinal Implants, Institute for Ophthalmic Research, Tuebingen, Germany .

Skills and Interests

Python, MATLAB, Orcad, Altium designer.

Large scale neural data analysis, Computational modeling of biological systems.

Electrophysiology, Spike sorting, Neural stimulation, Retina dissection, EEG data collection.

Experience with low noise biomedical amplifiers, Ardoino and Microcontrollers.

Languages

English, German (B1), Persian (native).

Publications in preparation

[1] **Shabani H**, Zrenner E, Rathbun D, Hosseinzadeh Z. Classi-fication of pseudocalcium visual responses from mouse retinal ganglion cells. Submitted.

[2] **Shabani H**, Zrenner E, Rathbun D, Hosseinzadeh Z. Characterizing electrical input filters of ganglion cell types in mouse retina. In prep.

Publications

[1] Naghibi Rad P, Shahroudi AA, **Shabani H**, and Lashgari R. Encoding Pleasant and Unpleasant Expression of the Architectural Window Shapes: An ERP Study. *Frontiers in Behavioral Neuroscience*, 13:186, 2019.

[2] Rathbun DL, Ghorbani N, **Shabani H**, Zrenner E, and Hosseinzadeh Z. Spike-triggered average electrical stimuli as input filters for bionic vision—a perspective. *Journal of Neural Engineering*, 15(6):063002, 2018.

[3] **Shabani H**, Mikaili M, and Noori SMR. Assessment of recurrence quantification analysis (RQA) of EEG for development of a novel drowsiness detection system. *Biomedical Engineering Letters*, 6(3):196–204, 2016.

References

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Dr.Zohreh Hosseinzadeh
○ University of Leipzig
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Dr. Mohammad Mikaili
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Links

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