

Amirreza Bahramani

B.Sc. Student of Electrical Engineering

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COMMUNICATION

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EDUCATION

SEPTEMBER 2017 – FEBRUARY 2022

B.Sc. of Electrical Engineering, K. N. Toosi University of Technology, Tehran, Iran

GPA: 15.54 / 20

Thesis: Design and Implementation of a Fully-Digital Neuromorphic Processor ([link](#))

Supervisor: Dr. Amir M. Sodagar

Some Relevant Courses (Chronological order):

- Signals & Systems
- Electronics 1, 2, 3
- Filter Design
- Digital Design with FPGA
- Solid-State Physics
- Fundamentals of Intelligent Systems by Dr. Mahdi Aliyari Shoorehdeli
- Functional Brain Imaging Systems (Graduate course) by Dr. Ali Khadem
- [Implantable Biomedical Systems](#) (Graduate course) by Dr. Amir M. Sodagar
- Statistical Pattern Recognition (Graduate course) by Dr. Hamid Abrishami Moghaddam

SOME OTHER COURSES

AUGUST 2021 – MARCH 2022

System and Cognitive Neuroscience School, Sharif University and IPM

This is an intensive school on different aspects of Cognitive and Systems Neuroscience

This school is still in progress and it has more than 9 hours of education every week

Courses:

- Programming by Dr. Zahra Barackchian
- Signal Processing by Dr. Ehsan Rezayat
- Cellular Neurobiology by Dr. Mehdi Sanayei
- Neurophysiology by Dr. Atefeh Bakhtazad
- Neuronal Modeling by Dr. Alireza Valizadeh
- Neuroanatomy by Dr. Mohammad Taghi Joghataei
- Data Acquisition and Imaging Techniques by Dr. Hossein-Zadeh
- Sensory Neuroscience by Dr. Mohammad-Reza A. Dehaqani
- Motor Systems by Dr. Abdol-Hossein Vahabie
- Statistical Analysis of Neural Data by Dr. Abdol-Hossein Vahabie
- Machine Learning by Dr. Reza Ebrahimpour
- Higher-Level Cognition Processes by Dr. Abdol-Hossein Vahabie
- Neural Data Analysis by Dr. Ehsan Rezayat
- Deep Learning by Dr. Emad Fatemizadeh

JULY 2021

Computational Neuroscience School, [Neuromatch Academy](#)

A dense 3-week workshop on different aspects of CN and ML

You can see details in this [link](#)

[See certificate](#)

FEBRUARY 2021

Introduction to Brain Anatomy and Cognitive Neuroscience, Sharif Interdisciplinary Schools

DECEMBER 2020

17th EEG Signal Recording & Signal Processing Workshop,

National Brain Mapping Laboratory (NBML)

Credential ID 439-0021901041

SEPTEMBER 2020

Introduction to Human Evolution, Sharif Interdisciplinary Schools

MARCH 2020

Python Programming, Maktabkhooneh Academy

[See certificate](#)

SUMMER 2019

Internet of Things Summer School, University of Tehran IEEE Student Branch

APRIL 2018

Matlab Programming, K. N. Toosi University of Technology IEEE Student Branch

EXPERIENCES

APRIL 2022 – PRESENT

Research Assistant, IPM, School of Cognitive Sciences, Birds Garden

In the birds garden, we work on the neuroscience of songbirds through electrophysiology and behavioral studies.

JUNE 2018 – PRESENT

Researcher, Mowazi Institute

Mowazi works on various philosophical topics but its main focus is on the relation between science, religion and philosophy, especially in neuroscience, evolution, cosmology and physics.

JULY 2021 – FEBRUARY 2022

Internship, Research Laboratory for Integrated Circuits and Systems (ICAS), K. N. Toosi University of Technology

My project is on Neuromorphic Computing

Supervisor: [Dr. Amir M. Sodagar](#)

SEPTEMBER 2021 – JANUARY 2022

Teaching Assistant, K. N. Toosi University of Technology

Course: Electronics 2, Dr. Hesam Zandi

Responsibilities: Holding weekly classes, Designing HomeWorks, Teaching PSpice, and...

FEBRUARY 2021 – JULY 2021

Teaching Assistant, K. N. Toosi University of Technology

Course: System Digitals 1, Dr. Hesam Zandi

Responsibilities: Holding weekly classes, Designing HomeWorks, Teaching VHDL, and...

SEPTEMBER 2020 – FEBRUARY 2021

Teaching Assistant, K. N. Toosi University of Technology

Course: Electronics 1, Dr. Hesam Zandi

Responsibilities: Holding weekly classes, Designing HomeWorks, Teaching PSpice, and...

FEBRUARY 2020 – JULY 2020

Teaching Assistant, K. N. Toosi University of Technology

Course: Electric Circuits 1, Dr. Ali A. Razi-Kazemi

Responsibilities: Holding weekly classes, Designing HomeWorks, Teaching Proteus and...

FEBRUARY 2020 – JULY 2020

IEEE KNTU Student Branch Executive Committee Member, IEEE Iran Section

Responsibilities: Managing IEEE KNTU branch, Working on [Signal](#) magazine and...

RESEARCH INTERESTS

- Computational Neuroscience
- Neural Signal Processing
- Neuromorphic Computing
- Spiking Neural Networks
- Cognitive Science
- Brain Implants
- Philosophy of Mind
- Science and Religion relation

PROFESSIONAL AFFILIATIONS

- IEEE Student Member (ID: 95678136)

DONE PROJECTS

- Using Spiking Neural Networks for Pattern Recognition tasks
- Predicting image identities in mice from VIP and SST cells activities based on Allen Institute dataset ([Original paper from Allen Institute](#))
- Implementing a BCI paper ([A novel hybrid BCI speller based on RSVP and SSVEP paradigm](#))
- Spike sorting using k-means and Fuzzy c-means methods
- Implementing exponential function on FPGA using VHDL

SOME PRESENTATIONS

- What is modeling? And how to model a Neuron? ([Slides](#))
- An Introduction to Computational Neuroscience & Neuromorphic Computation ([Slides](#))
- A brief review on Spinal Cord Stimulation for Spinal Cord Injuries ([Slides](#))
- How is your computer intelligent? ([Slides](#))

AWARDS

- Accepted in the first stage of The Fifth National Brain-Computer Interface (BCI) Competition Focusing on Auditory Attention held by National Brain Mapping Laboratory (NBML), 2022 (Second stage is in progress)
- Accepted in the first stage of The First National fNIRS Data Analysis Competition Focusing on Working Memory held by National Brain Mapping Laboratory (NBML), 2021
- Accepted as Top 1% among 150,000 participants in the Iranian Undergraduate National Entrance Exam, 2017

SKILLS

Language

- Persian: Native
- English: Fluent
- Arabic: Reading

Software

- The Brian2 Neural Simulator
- Scikit-learn
- TensorFlow
- PSpice
- Proteus
- HSpice
- ISE Design Suit
- EEGLAB
- Brainstorm

Programming

- Python
- Matlab
- VHDL
- C

Others

- Public speaking
- Microsoft Office