Mehrdad Rahimian Aqda

Contact information

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in LinkedIn

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Interests

- Neuroscience
- medical Engineering
- Robotics
- Machine learning
- Artificial Intelligence
- Signal processing

Skills

- Signal processing
- STM32 ARM MCU
- AVR MCU
- FPGA Spartan
- C Programming
- PCB Designing
- Analog & Digital Circuit Designing
- LaTeX

Languages

- Persian: native
- English: IELTS in progress

Libraries

- TensorFlow
- NumPy

EDUCATION

K.N. Toosi University

2019 – Expectation:2021

GPA: 17.66/20

(3rd Top Student)

Master of Science Digital Electronics Engineering

Thesis: Proposing an Appraoch for Automatic Detection of Ventricluar Arrhythmia by Real Time ECG Signal Processing and it's Hardware Implementation

K.N. Toosi University

2015- 2019

GPA: 17.09/20

Bachelor of Science Electronic Engineering

Thesis: Design and Implementation of Artificial Intelligence (Q-Learning) on Hardware on "Paper Soccer Game"

EXPERIENCE

Research & Development

2019 - Present

ACSIDMAAD | UNIWAY OPTRONIX

Electronic Designing and Programming on Medical Devices (Ventilator, CPAP) & 3D-Printers (DLP, MJP)

Research Assistant

2018 – Present

Hossein Hosseini Nejad | FPGA LAB

Researching ECG Signal Processing, Automatic Detection of Arrhythmia Using Machine Learning and Implementation of Q-Learning Methods on FPGA

Research Assistant

2016 – 2018

Hamid D.Taghirad | ARAS LAB

Worked on Electronic Designing and Programming Unmanned Ground Vehicle Circuits and Communication between Operator and Robot as KN2C Team Member

Teaching

2017

RSI | Electronics in Robotics workshop

Teaching Basic Electronic Circuits & STM32 ARM MCUs Programming & PCB Designing - Held by KN2C Laboratory under supervision of the Robotics Society of Iran (RSI)

Teaching

2016

IEEE | AVR Micro controller workshop

Teaching AVR Microcontroller Programming - Held by Scientific Association of Electrical Engineering - K.N. Toosi Under Supervision of IEEE

Teaching Assistant

2016

IEEE | MATLAB workshop

Assisted teaching MATLAB & Simulink - Held by Scientific Association of Electrical Engineering - K.N.Toosi under supervision of IEEE

Courses

- ✓ **Implantable Micro Systems |** *GPA: 20/20 (A+)*
- ✓ **Machine Learning |** *GPA: 17.3/20 (A)*
- ✓ **Digital Signal Processing |** *GPA: 15.7/20 (B)*

Software

- MATLAB
- Altium Designer
- PSPICE
- STM32Cube IDE
- ISE
- Qt Designer
- Arduino

Programming Languages

- C/Cpp
- Python
- VHDL
- Assembly

Operating Systems

- Windows
- Ubuntu

Embedded Systems

- Raspberry pi
- Orange pi
- ESP 32
- Latte Panda

Hobbies

- Movies
- Football
- Volleyball
- Travelling

NOTABLE PROJECTS

✓ **Automatic Arrhythmia Detection System on Cardiac Signal**

Signal Processing, Noise filter, Feature Extraction, Deep Learning Methods

✓ **Ventilator & CPAP**

BLDC Motor Driver, STM32 Micro-controller, Fuzzy & PID controller, NEXTION LCD, Pressure and Flow sensor

✓ **Unmanned Ground Vehicle (Xerxes)**

RS485, DC motor Driver, Thermal Camera, Gyroscope, UDP, Servo motor, PID

✓ **Implementation of Q-Learning on "Paper Soccer Game"**

Qlearning (Reinforcement Learning), Python , Spartan 6 FPGA, VHDL

✓ **Wax injection 3D Printer (MJP)**

BLDC motor, Stepper motor, NTC sensor, Innovative bus protocol based on RS485, UDP, Temperature PID Controller

✓ **DLP 3D Printer**

Stepper motor, Laser Distance Measurement Sensor, Innovative Automatic Cutter Robot, Opto Counter

HONORS & AWARDS

1st Place	The Best Electrical Engineering Seminar 2021
K.N. Toosi University	*Thesis: Evaluation of feature extraction methods to identify cardiac arrhythmias*
2021	
5th Place	RoboCup	Nagoya, Japan
2017	*Real Rescue League – as KN2C Team member*
3rd Place	RoboCup IRAN OPEN	Tehran, Iran
2017	*Real Rescue League – as KN2C Team member*
2nd Place	ICRoM	Tehran University of Iran
2016	Innovation League – as KN2C Team member

VOLUNTEER & EXTRA-CURRICULAR

✓ **Participated in Code Life Ventilator Challenge | Agorize - 2020**

✓ **Full Attendance at Applied AI with Deep Learning Class | IEEE - 2020**

✓ **Executive Commute of ICRoM | RSI - 2016**

✓ **Active Member of Scientific Association of Electrical Engineering | 2016**

✓ **LaTeX Workshop | IEEE - 2021**

References

Hamid D.Taghirad

Professor of Electrical Engineering   K.N. Toosi

University of Technology

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Hossein Hosseini-Nejad

Assistant Professor of Electrical Engineering K.N. Toosi

University of Technology

Email: hosseini_nezhad@eetd.kntu.ac.ir