



Sepehr SeifiZarei

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Born 16 Aug 1996

Education

2023 – Present

Doctor of Technology in Computer Science - Health Technology

University of Turku (UTU)

Turku , Finland

Thesis: Unobtrusive Physiological Monitoring and Diagnosis of Cardiovascular Diseases using Machine Learning

Supervisors: [Assistant Prof. Matti Kaisti](#), [Assistant Prof. Antti Airola](#)

2018 – 2022

Master of Science in Biomedical Engineering - Bioelectric

Iran University of Science and Technology (IUST)

Tehran , Iran

GPA: 4/4 - 17.42/20

Thesis: Despeckling of Medical Ultrasound Images using Deep Learning

Supervisor: [Dr. Hamid Behnam](#)

2013 – 2018

Bachelor of Science in Electrical Engineering - Electronics

Bu-Ali Sina University (BASU)

Hamedan , Iran

GPA: 3.5/4 - 16.5/20

Thesis: Application of FibroScan® device in liver diseases

Supervisor: [Dr. Soheil Ganjefar](#)

Research Interest

1. Health Technology
2. Data Science
3. Machine Learning
4. Deep Learning

Publications

Conference

- S. Seifizarei et al, "**Evaluating Piezoelectric Ballistocardiography for Post-Surgical Heart Rate Monitoring** ", Computing in Cardiology 2024

Journal

- S. Seifizarei et al, "**Continuous Radar-based Heart Rate Monitoring in Intensive Care Unit** ", IEEE Journal of Biomedical and Health Informatics

In preparation

- S. Seifizarei et al, "**Robust Multi-node Accelerometer-Based Bed Monitoring System for Longitudinal Heart Rate Detection in Clinical Setting** ", Target Journal: JMIR mHealth and uHealth

Work Experience

- | | |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project Researcher | <ul style="list-style-type: none">• RM4Health: Algorithm development and heart failure investigation, 2023-Present, University of Turku• Moore4Medical: Signal processing and atrial fibrillation detection using radar and bed sensors, 2022-2023, University of Turku |
| Teaching Assistant | <ul style="list-style-type: none">• Medical Instrumentation: ECG and PPG circuit simulation with LT Spice software and hands-on implementation, Spring 2024, University of Turku• Physiology Lab: ECG signal acquisition and processing with LabChart software, 2019-2020, Iran University of Science and Technology |
| Internship | <ul style="list-style-type: none">• Electric-motors repairing and wiring, 2015-2016, Hamedan Technical Electric |

Awards and Honors

- Received national graduate and undergraduate full scholarship
- Ranked within top 5% among more than 40,000 participants in Iranian university entrance exam for Master's degree
- Ranked within top 1% among more than 222,000 participants in Iranian university entrance exam for Bachelor's degree
- 2nd Rank in Handball national universities competitions - 2018

Selected Courses and Projects

- | | |
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| Graduate | <p>Statistical Pattern Recognition (GPA: 4/4 - 18.65/20)</p> <ul style="list-style-type: none">• Under supervision of Prof. Mohammadreza Daliri• Final Project: ECG arrhythmia classification using a 2D convolutional neural network• Implementing a deep two-dimensional convolutional neural network (CNN) for Electrocardiogram (ECG) arrhythmia classification in MATLAB environment <p>Medical Image Processing (GPA: 4/4 - 16.1/20)</p> <ul style="list-style-type: none">• Under supervision of Prof. Aboozar Ghaffari• Final Project: A Hierarchical Image Matting Model for Blood Vessel Segmentation in Fundus Images• Extracting blood vessels from fundus images using a hierarchical image matting model in MATLAB environment <p>Ultrasound in Biomedical Engineering (GPA: 4/4 - 16/20)</p> <p>Brain-Computer Interface Systems (GPA: 4/4 - 17.6/20)</p> |
| Undergraduate | <p>Linear Control, Digital Control, Electronic Circuit</p> |
| Online Courses | <p>Linkedin Learning</p> <p>Course: Robot Framework Test Automation: Level 1 2, Taught by: Bryan Lamb</p> <p>Course: API Test Automation with SoapUI, Taught by: Dave Westerveld</p> <p>Course: Robot Framework Test Automation: Jenkins CI and Git Version Control, Taught by: Bryan Lamb</p> <p>Course: Robot Framework Test Automation: Sauce Labs, Taught by: Bryan Lamb</p> <p>COURSERA</p> <p>Course: Neural Networks and Deep Learning, Taught by: Andrew Ng, by Deeplearning.io</p> <p>Robotech Academy</p> <p>Course: Deep Learning for Computer Vision, Main skills covered: Object Detection, OpenCV, Google Colab, Neural Networks</p> |

Skills

- **Programming Languages:** Python, MATLAB
- **Deep Learning Frameworks:** Keras, Tensorflow, PyTorch
- **Data Science:** Data Analytics, Data Visualization, Cluster Computing (CSC-PUHTI)
- **Software:** Code Vision AVR, Proteus Design Suite, Onshape, AutoCAD, Altium
- **Markup Language:** \LaTeX , HTML/CSS

Language Proficiency

Persian: Native

English: Fluent

TOEFL Score: 105/120

Finnish: Basic

Voluntary work

- Member of Hamedan Animals Rescue Non-governmental Organization, Hamedan, Iran, 2018-Present

Hobbies and Interests

Sport

- Cycling
- Handball
- Ping-Pong

Music

- Piano
- African Drum