



## 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

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

## Awards and Honors

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

## Skills

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- **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

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**Persian:** Native

**English:** Fluent

**TOEFL Score:** 105/120

**Finnish:** Basic

## Voluntary work

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

## Hobbies and Interests

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### Sport

- Cycling
- Handball
- Ping-Pong

### Music

- Piano
- African Drum