



Sepehr Seifizarei

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About Me

I am a dedicated data scientist and health technology researcher with a strong foundation in machine learning and data engineering. My research focuses on developing innovative, unobtrusive monitoring systems for cardiovascular diseases, blending technical expertise with a passion for improving healthcare outcomes.

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](#), [Associate 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: [Associate Prof. 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: [Prof. Soheil Ganjefar](#)

Work Experience

Doctoral Researcher

RM4Health: Data pipeline management and Algorithm development for 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

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

Electrical motors fault diagnosis, 2015-2016, Hamedan Technical Electric

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

Skills

Data Engineering and Analysis:

- Data pipeline management (ETL processes)
- Data cleaning and preprocessing
- Data analysis and visualization
- Machine learning model development and deployment

Programming and Tools:

- **Programming Languages:** Python, MATLAB, SQL
- **Deep Learning Frameworks:** Keras, TensorFlow, PyTorch
- **Cloud Platforms:** AWS
- **Version Control:** GitHub, GitLab
- **Operating Systems:** Linux
- **Web Development:** HTML/CSS

Software and Tools:

- **CAD Software:** AutoCAD, Altium, Onshape, Proteus Design Suite
- **Microcontroller Development:** Arduino IDE, Code Vision AVR
- **Documentation:** LaTeX, MS Word

Projects

Graduate **Statistical Pattern Recognition** (GPA: 4/4 - 18.65/20)

- Under supervision of [Prof. Mohammadreza Daliri](#)
- **Final Project:** ECG arrhythmia classification using a 2D convolutional neural network for Electrocardiogram (ECG)

Medical Image Processing (GPA: 4/4 - 16.1/20)

- Under supervision of [Assistant Prof. Aboozar Ghaffari](#)
- **Final Project:** A Hierarchical Image Matting Model for Blood Vessel Segmentation in Fundus Images

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

Language Proficiency

- **Persian:** Native
- **English:** Fluent (TOEFL: 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