

Reza Sadeghi

❖ Professional Experience

Mechanic R&D Engineer

ISENSE Health Monitoring, Tehran, Iran

Aug 2021 – Aug 2022

- Vibration analysis: signal processing and research on mechanical joints looseness
- Designed & built a calibration setup with nearly 10 μ m accuracy for crack meters
- Designed, analyzed, and manufactured temperature and strain data loggers enclosures

Mechanical Designer

IPC Company, Tehran, Iran

Nov 2020 – Mar 2021

- Develop a laboratory pressure mat using FSR and its interactive software for movement monitoring (using PyQt and Arduino).
- Designed PMMA structures and enclosures for switching rectifiers

Mechanical Dynamic and Vibration Teaching Assistant

IUST, Tehran, Iran

Feb 2020 – Apr 2021

- TA of mechanical vibration and vector dynamics
- Tutor of MATLAB for three semesters
- Head of MATLAB competition instructors for two competitions

Mechanical R&D Intern

Nabz Company, Tehran, Iran

Apr 2019 – Sep 2019

- Analyzed the stethoscope acoustic structure in Abaqus
- Researched signal & systems field

Mechanical Intern

Nilper Company, Parand, Iran

May 2018 – Jun 2018

- Mechanical design (Solidworks)
- Become familiar with industrial manufacturing processes

❖ Education

M.Sc. of Energy Engineering

University Of Polytechnic of Milan, Milan, Italy

2022-2024

- Focused on PHM, CM, Risk & Reliability

B.Sc. of Mechanical Engineering

Iran University of Science and Technology, Tehran, Iran

2017-2021

- Grade: 18.64/20 (GPA of 3.96/4) – 3rd rank on the campus
- Focused on Condition Monitoring and Fault diagnosis
- Thesis: Bearing Fault Detection Using EMD and Ensemble Neural Network, under Dr. Rajabi's supervision

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Milan, Italy

Skills

Python (Data Science)
MATLAB (Advanced)
CAD (Solidworks - Expert)
ABAQUS
COMSOL
Signal Processing

Interests

Industry AI
PHM
Condition Monitoring
Measurement systems
Vibration & Dynamics
Digital Twin
Signal Processing
Machine learning

Languages

English (IELTS 6.5)
Persian (Native)
Italian (A1, beginner)

❖ Notable Projects

Turbine Flow Meter Fault Diagnosis

2019-2022

- Industrial Project – Data analysis and Data Acquisition
- TFM Fault detection and health index evaluation using ultrasonic data with AI-based methods

Chemical Reactor System– Beta Resin

2021-2022

- Build & Design a reactor that is able to control rotation speed and measure its torque.
- Currently, this device is operating in Beta resin company, and the patent is under submission.

Personal Projects (Lambert)

- Prediction flow parameters using AI (LSTM & ConvLSTM)
- Create a python package to facilitate the process of using the Heisler charts graphically (Available on GitHub)
- Build, Design & Optimize a bridge prototype using Genetic Algorithm & SFLA
- Designing the mechanical parts of a rubber tensile test setup (Scope 3D)
- Design and manufacture a prototype of an automated yarn winder called Pyro
- Design a complete package for 3D printed part recycling called FilaCycle

❖ Extracurricular Courses

- Linear Algebra for Machine Learning and Data Science (Coursera)*
- Bayesian Signal and Image Processing (ISAV)*
- Rotor Dynamics (Parsi Tek)
- Deep Learning Summer School (Kharazmy University)
- Bayesian statistics (Coursera)*
- NDT Workshop (University of Tehran)
- Time series (Udemy)*
- General Engineering Acoustics (ISAV)*
- Other: Advanced SolidWorks, Python, MATLAB*, COMSOL & Abaqus

❖ Awards

- 3rd rank of mechanical engineering campus (2021)
- Got admission from Uni. Of Tehran (UT), Sharif University (SUT) for direct master program
- Honorary member of the scientific society of mechanical engineering (2020 - 2021)
- First Rank of Bridge prototype design competition (2018)
- Acceptance as the top first percent University Entrance Exam (2017)
- Acceptance in the first stage of the Physics Olympiad (2016)
- Acceptance in the first stage of the Astrophysics Olympiad (2016)