Mohammad Salehikho

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Education

K. N. Toosi University of Technology, Tehran, Iran **Sep. 2018 – Feb.2022**

- M.Sc.in Electrical-Control Engineering
- GPA: 17.48/20 (3.88/4)
- Thesis title: Fault Diagnosis Using CNN by Translating Vibration Signals Into Artificial Images.(very good-18:18.99)
- Supervisor: Prof. Mohammad Teshnehlab and Dr. Mahdi Aliyari Shooredeli

Shahed University, Tehran, Iran **Sep.2012 – Feb.2018**

- Bachelor of Electrical-Control Engineering
- GPA: 13.50/20 (2.44/4)
- Thesis title: Power and Velocity Control of Wind Turbines by Fuzzy Controller During Full Load Operation.(Score:18/20)
- Supervisor: Dr. Mohammad Manthouri

Hatef High School, Tehran, Iran **2010**

- High School diploma in Mathematics and Physics
- GPA: 19.10/20

RESEARCH INTERESTS AND SKILLS

- Advanced machine learning
- Condition monitoring and predictive maintenance systems - Fault diagnosis and prognosis using both model-based and data-driven approaches
- Modeling and system identification - time series modeling, transfer function, linear state space models, nonlinear identification
- Control theory - linear, optimal, adaptive, nonlinear, stochastic
- Signal processing - time and frequency domain analysis, joint time-frequency domain analysis

Experiences

MAPNA Electric & Control Engineering & Manufacturing Co. **Sep. 2020 – Present**

Researcher *Fardis, Karaj*

- Research and develop to create a model for Brain tumor segmentation and classification in Health Care project
- Vibration data acquisition
- Vibration Data gathering (read data from Oracle Database) and analysis
- Web-app design for monitoring vibration data.
- Data transmission between python and LabVIEW

Research Laboratory for intelligent systems,K. N. Toosi University of Technology **Sep. 2019 – Present**

Teacher and Research Assistance *Tehran, Tehran*

- Assisting Prof. Mohammad Teshnelab with Deep learning in graduate level.
- Assisting Dr. Mahdi Aliyari Shooredeli with fault detection and identification in graduate level.
- Image classification & segmentation
- Transfer learning & domain adaptation
- Estimation and System Identification

HYUNDAI ELEVATOR (Mehfakhr Asankar Co. Ltd) **Dec. 2014 – Dec. 2016**

Supervisor *Tehran, Tehran*

- Supervisory of the installation of mechanical instruments such as elevators, escalator, etc in various projects
- Supervisory of the maintenance of mechanical instruments

PUBLICATION

"Control and synchronization of chaotic spur gear system using adaptive non-singular fast terminal sliding mode controller" **Accepted**

- Mohammad Ali Labbaf Khaniki , Mohammad Salehi Kho and Mahdi Aliyari Shoorehdeli

RESEARCH PROJECTS

Fault diagnosis of rolling bearings: **2019 – 2020**

- Vibration analysis in time, frequency, and joint time-frequency domain.
- Machine learning methods - Neural Network (Multi-layer perceptron, Radial Basis Function, probabilistic network, Stack auto-encoder, convolution network), and fuzzy classification
- Monitoring of statistical indices such as kurtosis, spectral kurtosis, and entropy.

Image Classification & Segmentation : **2020–2021**

- Brain tumor segmentation and classification using U-Net and LeNet-5 architecture.
- The real-time detection of cars using the YOLO-v3 algorithm.

System Identification: **2020**

- Applying LSTM network for identifying linear and nonlinear systems using winer hammer model.
- Using RBF network for identifying a single-joint and two-joint robotic system.
- ANN structure optimization using evolutionary algorithm for the purpose of system identification.

Control Theory: **2019 – 2020**

- Applying high order sliding mode for controlling BLDC motor.
- Applying adaptive high order sliding mode for controlling BLDC motor.
- Using MLP for controlling and identifying BLDC motor.
- The design of optimal control for 3 - DOF robot with different constrains.

Technical Skills

Programming:

- Expert in Python, MATLAB, LabVIEW, Linux and Latex.
- Familiar with Vensim, CSS and HTML

Language:

- Persian: mother tongue
- English: Professional proficiency

REFERENCES

Prof. Mohammad Teshnelab, teshnehlab@eetd.kntu.ac.ir

- Professor, Faculty of Electrical Engineering, K. N. Toosi University of Technology,System and Control Engineering Department.

Dr. Mahdi Aliyari Shooredeli, aliyari@kntu.ac.ir

- Assistant Professor, Faculty of Electrical Engineering, K. N. Toosi University of Technology,System and Control Engineering Department.