Mohammad Amin Faraji

MASTER'S GRADUATE · MECHANICAL ENGINEERING · UNIVERSITY OF TEHRAN

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Education

University of Tehran — Tehran, Iran
MS IN MECHANICAL ENGINEERING — 2019 – 2022
- Thesis: Investigating the influence of auxetic spoke geometry on the optimization of NPT performance
- GPA: 3.3

Bu-Ali Sina University — Hamedan, Iran
BS IN MECHANICAL ENGINEERING — 2015 – 2019
- Capstone Project: Optimization of corrugated auxetic sheets using design of experiment method

Research Interests

Application of Machine Learning in Engineering, Optimization of mechanical lattice structures, Human-AI interactions, Reinforcement Learning

Publications

Peer-Reviewed Journal Papers

Multi Objective Optimization of a Bio-Inspired Structure in Non-Pneumatic Tires. (Under Review)
Mohammad Amin Faraji, Mahdi Shaban, Hashem Mazaheri – Advances in Engineering Software (2024).

Stacked Ensemble Regression Model for Prediction of Furan in Transformers. (https://doi.org/10.3390/en16227656)
Mohammad Amin Faraji, Alireza Shooshtari, Ayman El-Hag – Energies (2023), 16, 7656, MDPI.

Conference Papers

Investigation of the characteristics of a non-Pneumatic tire with different spoke shapes. (Link)
Mohammad Amin Faraji, Alireza Daneshmehr - The 30th Annual International Conference of Iranian Society of Mechanical Engineers-ISME2022.

Professional Experiences

3D Printing Specialist, Bu-Ali Sina University — 02/2023-present

- Responsible for managing the entire 3D printing process from concept development and design to final production.
- Managed and mentored master's degree students in their thesis research and experimental testing of models.

Teaching Experiences

2018	**Dynamics and Control Systems Simulation,** Teaching Assistant	Bu-Ali Sina University
2017	**Dynamics of Machinery**, Teaching Assistant	Bu-Ali Sina University

Selected Projects

U.S. Patent Phrase to Phrase Matching

- Developed a model to extract contextual information from phrases in U.S. patent documents, to identify similar phrases.

Hand gesture classification based on EMG signals

- Conducted CWT analysis on EMG signals and applied findings to train a DeepConvNet for hand gesture classification.

Facial Expression Recognition with Keras

- Web deployment of a CNN model for facial emotion recognition using OpenCV and FLASK.

Honors and Awards

2019 **Ranked 43 among more than 10,000 participants and a full scholarship for graduate study**, Nationwide Universities Entrance Exam for Graduate Study.

2014 **Ranked in the top 0.5% of students and a full scholarship for undergraduate study**, Nationwide Universities Entrance Exam for Undergraduate Study among more than 400,000 participants.

2010 **Accepted to take part in "Mathematics Olympiad Stage 2" from top 5% of participants in "Mathematics Olympiad Stage 1"**, Middle School, Iran

Online Courses

Coursera and Kaggle

- Machine Learning, Mathematics for Machine Learning and Data Science, DeepLearning.AI TensorFlow Developer Intermediate Machine Learning on Kaggle, Feature Engineering

Skills

Software Knowledge

- MYSQL
- GIT
- LaTeX
- MATLAB

Programming Skills

- Python
- Understanding of data structures and algorithms
- C/ C++ (Basic)
- HTML / CSS

Artificial Intelligence knowledge

- Proficient in Python's AI and data science libraries, including TensorFlow, PyTorch, Scikit-Learn, NumPy, and Pandas.

English Test Scores

- **IELTS** Advanced (CEFR level: C1)
  - Band score 7 (S:7, R:7.5, L:7.5, W:6)

References

Alireza Daneshmehr, Associate Professor – Master's degree supervisor

Faculty of Mechanical Engineering, University of Tehran, Iran. Email: Daneshmehr@ut.ac.ir

Hashem Mazaheri, Associate Professor – Bachelor's degree supervisor

Faculty of Mechanical Engineering, Bu-Ali Sina University, Iran. Email: h.mazaheri@basu.ac.ir

Ayman El-Hag, Lecturer – Paper supervisor and co-author

Faculty of Electrical and Computer Engineering, University of Waterloo, Canada. Email: ahalhaj@uwaterloo.ca