

Seyed Mohammad Hoseyni

Graduated Engineer , AI & Image processing, Tehran, IRAN

☎ (+98) 912 956 0701 • ✉ mohammadhosini60@gmail.com
📁 mamdaliof.github.io • 🌐 mohammad-hoseyni • 🌐 mamdaliof

EDUCATION

- **Bachelor's Degree: Electrical and Control Engineering** 2019–2024
🏫 *K. N. Toosi University of Technology* *Tehran-IRAN*
 - Thesis: Developing AI-assisted Software for the Classification and Segmentation of intracerebral hemorrhage.
 - Advisor & Supervisor: Dr. Amirhossein Nikoofard & Dr. Mahdi Aliyari-Shoorehdeli
 - Grade: 18.33/20
 - Ranked 6th among 135 electrical engineering students in the Entrance
 - Ranked 2nd among 35 control engineering students in the Entrance
- **Minor's Degree: Computer Engineering** 2019–2024
🏫 *K. N. Toosi University of Technology* *Tehran-IRAN*

RESEARCH INTERESTS

- Artificial Intelligence
- Computer Vision
- Data Science
- Robotics
- Embedded Systems
- Biomedical Engineering

EXPERIENCES

- 🦷 **SmarTeeth Startup** | 🏢 **Smartory Startup** 2023–Present
Research and Development Manager (AI, Computer Vision & Software Development)
 - Managed a team of three Engineers to develop an AI-based assistant for dentists. The software processes various types of radiographic images for classification, detection, and segmentation tasks, identifying specific characteristics and abnormalities. Integrated a Large Language Model (LLM) to generate detailed reports based on the analysis.
- 🏥 **APAC AI & Control** | 🏥 **Hazrat Rasul Akram Hospital** | 🏥 **Amir-Alam Hospital** 2022–Present
Technical Manager & Computer Vision Engineer
 - **Interacerebral Hemorrhage:** Led the development of AI-assisted software for classifying, segmenting, and quantifying hemorrhagic lesions in medical images. Responsibilities included data collection, overseeing the medical team for accurate annotation, and managing a team of five members throughout the project.
 - **Otorhinolaryngology:** Responsible for conceptualization, feasible study, and data gathering.
- 🏭 **Mechatronics and Biomechatronics Lab** Apr2022–Oct2022
Internship in the mechatronics lab at K.N.Toosi.
 - 🌐 More information on My Personal Website (click here).

SELECTED PUBLICATIONS

- 📄 Advanced Deep Learning-Based Approach for Tooth Detection, and Dental Cavity and Restoration Segmentation in X-Ray Images , 2023.
- 📄 AugmenTory: A Fast and Flexible Polygon Augmentation Library, 2024.
- 📄 Comprehensive Hyperparameter Tuning to Enhance Deep Learning Performance for Intracranial Hemorrhage Classification in Head CT Scans, under review.
- 📄 Two-Stage Deep Learning Approach with Novel Dataset and Advanced Post-Processing for Enhanced Intracranial Hemorrhage Segmentation, In Preparation.
- 📄 A Comprehensive Review on Kolmogorov-Arnold Networks through Implementation on Various Datasets (Pre-print).

🌐 More information on My Personal Website (click here).

SELECTED PROJECTS

- 🏆 Annual competition of artificial intelligence for classification of abnormal brain in MRI radiography
- 🔧 programming Kolmogorov-Arnold Networks (KAN) and perform a comprehensive grid search on Mnist, Cifar10 and Physionet-ICH datasets
- 🔧 Programming an Arduino and max-30100 pulse-oximeter module to measure blood oxygen and heart rate
- 🔧 Simulation of a suspension system and control it with a PID
- 🔧 Program a communication protocol to perform synchronized data transmission between two micro-controller
- 🔧 Designing an analog small signal amplifier

🌐 More information on My Personal Website (click here).

ACADEMIC EXPERIENCES

Teaching Assistant:

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|---|-------------|
| 🔧 Advanced Programming with Python, Dr. Hossein Yektamoghadam | Sept - 2024 |
| 🔧 Instrumentation Lab, Dr. Hossein Yektamoghadam | Sept - 2024 |
| 🔧 Design and Analyse Digital Systems 1, Dr. Mehdi Delrobaei | July - 2023 |
| 🔧 Numerical Calculations, Dr. Amirhossein Nikoofard | July - 2023 |

Workshop:

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| 📄 AI-Driven Vision Transforming Telecoms and Autonomous Systems, 11th International Symposium on Telecommunication | Oct - 2024 |
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SKILLS

Programming/Scripting




- Python/OpenCV
 - Seaborn
 - PyTorch/CUDA
 - Tensorflow
 - Sklearn
 - Pandas
 - NumPy
- C/C++
- Java/MATLAB
- SQL
- LaTeX

Domain Knowledge

- AI & Computer Vision
- Deep Learning
- Machine Learning
- Data Science
- Natural Language Processing (NLP)
- Mechatronics
- Instrumentation
- Control Engineering



 More information on My LinkedIn Page ([click here](#)).

Certificates














-  Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization
-  Neural Networks and Deep Learning
-  SQL Intermediate

SELECTED COURSE



Graduate


-  Machine Learning
-  Biomechatronic Systems

Undergraduate

-  Artificial Intelligence
-  Fundamental of Mechatronics
-  Advance Computer Programming
-  Linear Algebra
-  Numerical Methods
-  Data Structure
-  Algorithm Design
-  Linear Control Systems
-  Signal and Systems
-  Engineering Probability
-  Instrumentation
-  Modern Control
-  Industrial Control

References

-  Dr. Amirhossein Nikoofard
[Google Scholar](#) | [LinkedIn](#) | [Email](#) | [Gmail](#) | [Personal Webpage](#)
-  Dr. Mahdi Aliyari-Shoorehdeli
[Google Scholar](#) | [LinkedIn](#) | [Email](#) | [Gmail](#) | [Personal Webpage](#)
-  Dr. Mehdi Delrobaei
[Google Scholar](#) | [LinkedIn](#) | [Email](#) | [Gmail](#) | [Personal Webpage](#)

-  Dr. Mohammad Javad Ahmadi
Google Scholar | LinkedIn | Email | Gmail | Personal Webpage

❗ References, Further information, and Proofs are available upon Request.