ALIREZA HOSSEINI

AI Developer

Website
910 9694 866
Tehran, Iran
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RESEARCH INTERESTS

- Deep Learning, Computer Vision
- Saliency Map Prediction, Cognitive science
- Implicit Neural Representation
- Generative Models, OCR

SKILLS

Languages: Python, MATLAB, HTML, C/C++.

AI Tools: PyTorch, OpenCV, TensorFlow, NPM.

Others: Docker, Git, Linux, AI Model Serving, FastAPI.

EDUCATION

9/2022 - 9/2024 **Master of Science - MS, Telecommunication Systems** **University of Tehran**
Grade: 17.95/20. Thesis: Analyzing and improving the performance of networks for predicting human visual saliency map in images and investigating their use in the field of neuromarketing

9/2017 - 3/2022 **Bachelor of Science - BS, Electrical and Electronics Engineering** **Iran University of Science and Technology**
Grade: 17.03/20. Thesis: Diagnosing and Detection and of internal combustion engine accessories belt for health monitoring and performance investigation; a Machine Vision approach

9/2013 - 9/2017 **High School Diploma, Mathematics** **National Organization for Development of Exceptional Talents (Sampad)**

PUBLICATIONS

WACV2025 **SUM: Saliency Unification through Mamba for Visual Attention Modeling** **Github**
- **Alireza Hosseini**, Amirhossein Kazerouni, Saeed Akhavan, Michael Brudno, Babak Taati

Arxiv 2024 **Brand Visibility in Packaging: A Deep Learning Approach for Logo Detection, Saliency-Map Prediction, and Logo Placement Analysis** **Github**
- **Alireza Hosseini**, Kiana Hooshanfar, Pouria Omrani, Reza Toosi, Ramin Toosi, Zahra Ebrahimian, Mohammad Ali Akhaee
- Submitted to Applied Soft Computing Journal

WACV 2024 **INCODE: Implicit Neural Conditioning with Prior Knowledge Embeddings** **Github**
- Amirhossein Kazerouni, Reza Azad, **Alireza Hosseini**, Dorit Merhof, Ulas Bagci

ICWR 2024 **Hybrid Retrieval-Augmented Generation Approach for LLMs Query Response Enhancement**
- Pouria Omrani, **Alireza Hosseini**, Kiana Hooshanfar, Zahra Ebrahimian, Ramin Toosi, Mohammad Ali Akhaee

ICWR 2023 **Farsi CAPTCHA Recognition Using Attention-Based Convolutional Neural Network**
- **Alireza Hosseini** , Matine Hajyan, Ramin Toosi, Mohammad Ali Akhaee

ASE 2022 **Machine vision–based measurement approach for engine accessory belt transverse vibration based on deep learning method**
- Ashkan Moosavian, **Alireza Hosseini**, Seyed Mohammad Jafari, Iman Chitsaz, Shahriar Baradaran Shokouhi
- Journal: Automotive Science and Engineering 2022

ER 2022 **Development of Machine Vision System to Track Movement of an Engine Timing Belt Tensioner Based on Deep Neural Network**
- **Alireza Hosseini**, Moosavian Ashkan, Saeed Javan, Shahriar B Shokouhi
- Journal: The Journal of Engine Research 2022

EXPERIENCE

7/2022 – now **Artificial Intelligence Developer** **Adak Vira Iranian Rahjoo (AVIR)**
- Expertise in AI/ML, including LLMs, vision-language models (LVMs), saliency-map prediction, OCR, TTS, ASR, RAG, motion capture, pose estimation, and time-series prediction. Proficient in deploying solutions using FastAPI, Triton, Docker, and fine-tuning advanced models (diffusion, GANs, XLSTM). Developed systems for video/audio processing, data analysis, and document/query automation.

1/2023 – 11/2023 **Artificial Intelligence Developer** **University of Tehran**
- Project: Eye Tracking , Neuromarketing
- Supervisor: Dr. Mohammad Ali Akhaee, Associate Professor at the University of Tehran

12/2021 – 09/2022 **Artificial Intelligence Developer** **University of Tehran**
- Project: Persian HandWritten OCR
- Supervisor: Dr. Mohammad Ali Akhaee, Associate Professor at the University of Tehran

7/2021 – 7/2022 **Computer Vision Researcher** **Iran Khodro Powertrain Company (IPCO)**
- Detection and diagnosis of internal combustion engine accessories belt - Deep learning Aproaches

TEACHING EXPERIENCE

Fall 2024 **Machine Learning - Dr. N Araabi, Dr. A. Dehaqani** **University of Tehran**

Spring 2024 **Machine Learning - Dr. A. Dehaqani, Dr. Tavassolipour** **University of Tehran**

Spring 2024 **Blind Source Separation - Dr.Akhavan** **University of Tehran**

Fall 2023 **Machine Learning - Dr. N Araabi, Dr. A. Dehaqani, Dr. Tavassolipour** **University of Tehran**

Spring 2022 **Advance Logical Circuit - Dr. Mirzakuchaki** **Iran University of Science and Technology**

Fall 2021 **Logical Circuit - Dr. Mirzakuchaki** **Iran University of Science and Technology**

PROFESSIONAL SERVICES

01/2025 **Journal Reviewer for IEEE Transactions on Consumer Electronics**

08/2024 **Journal Reviewer for IEEE Transactions on Multimedia**

10/2021 **Journal Reviewer for PLOS ONE**

RELATED COURSES

Fall 2023 **Analysis and Design of Deep Neural Networks [Github]** **University of Tehran**
- Dr. Kalhor and Dr. N Araabi, Grade: 19.6/20

Fall 2023 **Deep Generative Models [Github]** **University of Tehran**
- Dr. Tavassolipour and Dr. Sadeghi, Grade: 19.6/20

Spring 2022 **Machine Learning [Github]** **University of Tehran**
- Dr. A. Dehaqani, Dr. Tavassolipour, Grade: 20/20

Fall 2022 **Blind Source Separation** **University of Tehran**
- Dr. Akhavan, Grade: 18.6/20

Fall 2022 **Deep Learning** **University of Tehran**
- Dr. Kalhor, Grade: 18.5/20

Fall 2022 **Information Theory and Learning** **University of Tehran**
- Dr. Sabbaghian, Grade: 18.9/20

Spring 2021 **Digital Signal Processing** **Iran University of Science and Technology**
- Dr. B Shokouhi, Grade: 20/20

CERTIFICATIONS

10/2023 **Introduction to Generative AI** **Coursera**

10/2021 **Build Basic Generative Adversarial Networks (GANs)** **Coursera**

08/2021 **Deep Neural Networks with PyTorch** **Coursera**

08/2021 **Advanced Computer Vision with TensorFlow** **Coursera**

06/2021 **Deep Learning A-Z™: Hands-On Artificial Neural Networks** **Udemy**

04/2021 **Complete Python Bootcamp from Zero to Hero in Python** **Udemy**

LANGUAGES

English - Professional working proficiency, **Persian** - native