

Hassan Ghaffari

AI & Computer Vision Engineer

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Experience

Phiji

AI & Computer Vision Lead

Tehran, Iran

Sep 2024 - Jan 2022

- Integrated AI into Phiji, a physical/digital toy for educating children through interaction and entertainment ([LinkedIn](#) | [details](#))
- Developed and implemented computer vision algorithms and models for various applications such as object detection, tracking, and face recognition
- Collaborated with Unity, Android, IOS, and software teams to integrate CV models into production
- Conducted experiments, analyze results, and iterate on algorithms to improve accuracy and speed
- Implemented and optimized real-time offline speech-to-text models
- Performed data collection and automatic annotation to prepare large datasets (+3M images of game tokens)
- Optimized models for real-time deployment on Android and IOS mobile phones

Robokids

AI & Computer Vision Research Engineer

Tehran, Iran

Oct 2023 - May 2021

- Developed and optimized real-time child re-identification systems, enhancing parental monitoring and user data accuracy across 24 HD cameras at Robokids, a robotic-interactive play center ([LinkedIn](#) | [details](#))
- Conducted data collection and annotation, capturing diverse scenarios of children at play at Robokids
- Implemented pose estimation and multi-object tracking for an augmented rock-climbing wall
- Designed and deployed real-time painting detection and segmentation systems, bringing children's artwork to life using image processing technologies

Institute for Cognitive Science Studies

EEG Researcher

Tehran, Iran

Sep 2021 - Sep 2019

- Deployed gamma-band auditory steady-state response (ASSR) as a biomarker for prediction of clinical response to rTMS in treatment resistant depression (TRD) and cognitive performance by machine learning techniques

Jarfabin

Computer Vision Researcher and Developer

Remote, Tehran, Iran

May 2021 - May 2019

- Designed, developed, and implemented multi-view deep CNN models to classify pistachio nut
- Managed pipelines of data collection, preprocessing, and annotation of 4-view pistachio nuts (+1M images)
- Optimized CV models using hyperparameter tuning and quantization for real-time inference on edge devices (Raspberry Pi and Jetson Nano)

Skills

Programming Languages: Python (expert) | Matlab (expert) | C/C++ (AVR/ARM Programming)

ML Frameworks: TensorFlow | PyTorch | ONNX | TensorRT | TensorFlow-Lite | OpenVino

Libraries and Tools: Diffusion | OpenCV | Socket | Git | Docker | Scikit-learn | Matplotlib

Bio-signal Processing: EEG Signal Processing | ERP | Time-Frequency Analysis | EEGLAB

Hardware Programming: Raspberry Pi | Jetson Nano | AVR | ARM Cortex-M3 microcontrollers | Keil | Altium

Education

Master of Cognitive Science, Cognitive Psychology

Institute for Cognitive Science Studies

Tehran, Iran

Sep 2021 - Sep 2018

Bachelor of Electrical Engineering, Electronics

Ferdowsi University of Mashhad

Mashhad, Iran

Sep 2016 - Sep 2011