Mohammad Khalili

Ai engineer

A mid-level AI developer with experience in machine learning and deep learning techniques. Hands-on experience with projects involving 3D point cloud alignment, image registration, robot control with VLM, and a voice-based Call Agent with TTS voice cloning and RAG. Eager to continue learning and growing in the field of artificial intelligence, with strong enthusiasm for tackling new challenges and expanding skill sets.

Contact

DEC-2001

Phone	(+98)9386064308
Email	mohammad.khalili1515@gmail.com
Address	Tehran-Enghelab
linkedin	m15kh
Github	m15kh
Youtube	think_more_enjoy_more
X	m15khh
website:	https://m15kh.github.io

Education

2021 - 2025

B.Sc. Electrical Engineering (communication)

K. N. Toosi University — Iran/Tehran

score

GPA	16
machine Learning	19.6
Discrete signal processing (DSP)	19.5
linear algebra	19

Skills

- **Python**
- Cuda
- C++
- Git
- Docker
- Django
- Hugging Face
- IOT
- **FastAPI**
- Websocket
- **Async programming**
- **LLM**
- Raspberry Pi
- ROS2
- RAG
- **Pytorch**
- Ultralytics
- MCP Server
- Webots Simulator
- **Isaac Nvidia Simulator**

Language

English(Upper-Intermediate)

German(Beginner)

Persian(Native)

Work Experience

Resana — may-2024 (more than 1.5 years)

AI Engineer — Full-time(On-Site)

- Working with the wider development team
- Working with YOLO object detection
- Utilizing transformer models for vison tasks
- Working on few-shot learning
- Working on VLM
- working on TTS model
- Working on 3D point cloud image registration

rasahoosh-atieh — jun-2025

AI Content Specialist — part time (Remote)

- Worked as AI Content Specialist
- Working with MidJourney, Flux, ElevenLabs, and other generative AI applications

Teaching Assistant — September 2024 - January 2025 (6 months)

Digital Signal Processing (DSP) — part time

for **Master's** students

Presented by Dr. Mohebbi

Teaching Assistant — January-July 2025 (6 months)

Signal and system — part time

for **Bachelor's** students

Presented by Dr. Mohebbi

Teaching Assistant — January-July 2025 (6 months)

Machine Learning — part time

for **Bachelor's** students

Presented by Dr. Mahdi Aliyari Shoorehdeli

Projects

Other projects with portfolios (LINK)

Dog Robot Control System using VLM

2025(August)

- Designed a JSON-based command schema for safe and interpretable robot actions (move, turn, stop, follow).
- Implemented serial communication to transmit finger count inputs to Arduino.
- Integrated location-aware modeling with a Vision-Language Model (**VLM**) to map detected humans into spatial commands (left, right, center).
- Developed a modular pipeline combining perception, reasoning, and robot SDK actuation.
- Simulated and tested the pipeline on **NVIDIA Isaac Sim** and **Webots**, using the **Unitree Go2 robot** model by ROS2 .
- Ensured a user-friendly setup and intuitive interface for seamless deployment.

Call Agent System with LLM, STT, TTS

2025(April)

- Integrated Text-to-Speech (**TTS**) with advanced voice cloning for natural, human-like responses, optimized for real-time interaction with high quality and ultra-low latency (**RTF < 1**).
- Optimized latency for smooth conversational flow with real-time response generation.

3D Clothes Reconstruction System (LINK)

2024(December)

AI-powered solution for creating 3D models of clothes from images or scans. Key highlights:

- Generated detailed 3D point clouds using advanced algorithms.
- Refined geometry with **warping-based reconstruction** and change detection.
- Developed algorithms to detect and fill holes in the 3D mesh.
- Automated the pipeline for accurate, textured 3D models

Sound Detection for Component Status (LINK)

2024(October)

AI-powered system for classifying component sounds as "intact" or "broken." Key highlights:

- Utilized Short-Time Fourier Transform (**STFT**) for time-frequency analysis, extracting robust features from audio signals.
- Applied noise reduction and preprocessing to improve model accuracy.
- Trained using a labeled dataset of intact and broken component sounds.
- Integrated with **real-time monitoring** to detect and alert users about anomalies.

Component Counter System (LINK)

2024(September)

AI-powered solution for counting bolts and nuts in a company setting. Key highlights:

- Utilized **YOLO** for real-time object detection and tracking.
- Deployed on a **Raspberry Pi**, enabling edge computing for compact and cost-effective deployment.
- Enabled precise counting of components, with unique IDs assigned to each detected item.
- Visual overlays display object IDs, trajectories, and live count metrics.

Barber Appointment (LINK)

2023(December)

Barbers can define their working days and time slots. Customers choose their preferred barber, available day, and time to book appointments. Key features include:

- Each barber has access to an admin panel to manage their schedule, including the ability to deactivate bookings for specific days.
- Customers and barbers have the option to cancel appointments.
- Barbers can set break times during the day, and the system prevents appointment bookings during these breaks.

Control devices with internet(IOT) (LINK)

2021

Smart Home Temperature and Light Control Project Using **ESP8266 Module**

- Ability to change the device's Wi-Fi connection to any other Wi-Fi network within the local server environment.
- Logging temperature data.
- Alerting the user if the temperature exceeds a certain threshold.
- Remote control of home lighting intensity.
- Integration with a mobile app for easy access and control from anywhere