Ali Amini Bagh

Machine Learning Engineer

Innovating with AI and Machine Learning to drive smarter decisions and transformative solutions.

About Me

I'm a graduate of the Faculty of Geodesy and Geomatics Engineering at Khaje Nasir Toosi University of Technology, focused on machine vision, NLP, and Speech recognition. I develop models to extract insights from visual and textual data. I'm also skilled in building scalable applications using frameworks like FastAPI and Django, bridging research with practical solutions.

Work Experience

AI Team Lead

Since September 2024 ROKAM Tehran, Iran

- Developing an intelligent chatbot designed to collaborate with users across various tasks, enhancing productivity and user experience.
- Designing and implementing advanced natural language processing (NLP) pipelines to improve the chatbot's understanding and response capabilities.
- Training and optimizing state-of-the-art language models tailored for specific business use cases and user needs.
- Staying at the forefront of AI advancements to continuously innovate and deliver impactful solutions.

Machine Learning Engineer

From August 2023 to October 2024 TOSAN Tehran, Iran

- Developed cutting-edge AI applications that optimized business processes and enhanced customer experience.
- Designed and implemented machine learning models for various use cases, including natural language processing and computer vision.
- Collaborated with stakeholders to identify business challenges and provide AI-driven solutions, resulting in increased efficiency and cost savings.

Co-Founder of Sewane

Since May 2024 SEWANE Tehran, Iran

Sewane is a cutting-edge **Automatic Speech Recognition (ASR)** system designed for **Persian** and **Kurdish** languages. It offers accurate, real-time transcription, supporting various dialects within these languages. With high precision and adaptability, Sewane is ideal for voice-driven applications such as virtual assistants, customer service automation, media transcription, and more. [Website](#)

Technical Mentor

Since October 2024 NEXTERA Tehran, Iran

Participated as a **mentor and instructor** in the **Turing Bootcamp**, a seasonal program hosted by the **University of Tehran** in collaboration with the **Nextera** Institute. This boot camp focuses on preparing participants for AI product management roles by blending technical and strategic training.

- Delivered technical training sessions on machine learning concepts and MLOps practices.
- Mentored participants, guiding them in applying AI principles to real-world product management challenges.
- Assisted in bridging the gap between technical AI knowledge and business-oriented product management skills.
- Provided hands-on support to participants, ensuring they were well-prepared for career transitions into AI product management roles.

Teacher Assistant

From 2018 to 2020 K.N.Toosi University

Teaching "Essentials of Programming Languages : python, Agent-based modeling and Computational intelligence courses

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SKILLS

Programming Language :
- Python
- C++ (basic)
- JavaScript (basic)
- HTML, CSS

AI :

Computer Vision :
- Object Detection & Recognition (YOLO, Faster RCNN, etc)
- Face Detection & Recognition (VGG-Face, Google Face, etc)
- Segmentation (UNet, Mask-RCNN)
- GANs
- Diffusion

NLP :
- Sentiment Analysis
- Large Language Models

Speech Recognition :
- Speech-To-Text
- Voice Activity Detection (VAD)

Reinforcement Learning :
- Deep Q Network
- Actor-Critic

DataBase
- PostgreSQL, MySQL
- MongoDB
- Redis
- Elastic

Frameworks and Libraries :
- Pytorch, Tensorflow, Keras
- Transformers
- LangChain, LangGraph
- Gradio, Streamlit
- Ollama, VLLM
- Celery, RabbitMQ
- MLFlow, AirFlow
- OpenCV, Scikit-Learn, PySpark
- NLTK, Spacy
- Pandas, Numpy, Matplotlib
- Django, FastAPI, Flask
- Jquery, bootstrap

Concepts :
- Model Context Protocol
- RAG
- Agents
- OOP
- Design Patterns
- Agile

Personal Projects

Multimodal Detection and Recognition Web Service

2022

Developed a web service utilizing FastAPI for detection and recognition tasks. The user-friendly UI allows seamless image and video uploads for analysis with advanced models, including facial emotion recognition, human, fire, gun, smoke, knife, and fight detection. Future updates will include text and speech recognition. Link To Project

Cards Information Extraction

From 2020 to 2021

Projects to extract cards information with OpenCV and object detection algorithms such as YOLO and prepare the outputs to use in the OCR system

- ATM Card Information Extraction
- Iranian National Card Information Extraction

Scalable REST API Services

From 2021 to 2022

dockerized, convenient, easily deployable, and scalable FastAPI for Motion Detection, Tracking, and Classification in images and videos

- Age-Gender Recognition FastAPI-Service
- Violence Recognition FastAPI-Service

Education

BSc : Geomatics

2018 K.N.Toosi University Tehran

MSc : Geographic Information Systems (GIS)

2021 K.N.Toosi University Tehran

- GPA 18.32 (3.88/4.0 as calculated by WES)
- thesis : "Planning of taxi sharing with different capacities using deep reinforcement learning"

Certifications

AI Product Management

From August 2024 to September 2024 University Of Tehran Tehran

Participated in an intensive AIPM Bootcamp covering the complete roadmap for becoming an AI Product Manager. Acquired skills in aligning AI technologies with business objectives, understanding AI development cycles, and managing AI product lifecycles from ideation to deployment.(LINK)

Workshops

2021 K.N.Toosi University

- Elementary and advanced deep learning
- Data mining with python

Courses

From 2021 to 2022 Coursera

- Introduction to Machine Learning in Production(LINK)
- Natural Language Processing with Classification and Vector Spaces(LINK)
- Python Project: pillow, tesseract, and opencv(LINK)
- Advanced Computer Vision with TensorFlow

Publications

journal of Information and communication Technology in policing (JICTP)

2021 Iran

Provide a deep reinforcement learning algorithm in pursue-evasion problem : a case study of smart police