

Ali Shahedi

DATA SCIENTIST

CONTACT ME

 (+98) 9390310117

 ali_shahedi@ee.sharif.edu

 <https://github.com/alish1377>

 [linkedin.com/in/ali-shahedi-1b3766220](https://www.linkedin.com/in/ali-shahedi-1b3766220)

ABOUT ME

I am an AI engineer with 2 years of experience in both academia and industry, focusing on Computer Vision and NLP. In Computer Vision, my work includes Cancer segmentation, Person Attribute Recognition, Person Detection, Image Matching, Depth Estimation, and Visual Odometry. In NLP, I have worked with BERT and am currently exploring Agentic AI concepts such as CoT, ReAct, RAG, and prompt engineering. I also have experience with graph optimization and anomalous signal detection. I am eager to develop my expertise in LLMs through innovative projects. I am currently available in both Tehran and Mashhad cities.

EXPERIENCE

Computer Vision engineer at AIMEDIC CO (1400\04\20 - 1400\12\01)

I worked at AIMEDIC as an Image processing and

- Skin cancer segmentation task based on U_Net-based models
- Active learning strategies
- Working with Streamlit and Mlflow as the AI frameworks
- Paper: <https://arxiv.org/abs/2210.16399>

Computer Vision engineer at Hunamic (1403\05\01 - 1403\12\28)

- Implement an Image Matching algorithm for aerial images
- Visual Odometry(VO) to measure the translation and velocity of UAV based on aerial images
- Depth estimation of aerial images using stereo cameras

Data Scientist at Sharif Hamrah (1404\01\16 - Now)

- Anomalous signal detection and graph optimization from spectrum data

RESEARCH ASSISTANCE

Bourse Chatbot | 2021-2022

My undergraduate project was: "Retrieval Bourse Chatbot App named Chat-Parse based on ParseBERT language model." I used Flask for the server, PostgreSQL for the Database, and HTML, CSS, JS, and related frameworks for the Frontend parts. Also, I used Pytorch to design and evaluate the model. (Grade: 20)
Paper: <https://ijict.itrc.ac.ir/article-1-564-en.html>

Pedestrian Attribute Recognition | 2023-Now

I am currently working on my master's thesis, which is: "Design and Implementation of Low Computational Algorithms for Person Attribute Recognition in Surveillance Videos."
Model: Transformer-based algorithms
Framework: Pytorch in Python, Libtorch and OnnxRuntime in C++

EDUCATION

Amirkabir University (Tehran Polytechnique)

Bachelor's Degree in Electrical Engineering (GPA: 3.33) (Rank 504 in the bachelor's exam)
2017-2022

Sharif University of Technology

Master student in Electrical Engineering (Digital systems) (GPA: 3.74) (Rank 11 in the master's exam)
2022-Now

OTHER PROJECTS

Some educational and industrial projects in the Machine learning, Computer vision, Big Data, and Programming areas :

- Design an application similar to Roboflow which simulates the basic preprocessing of an image with PyQt
- Work on Parallel implementation of Matrix multiplication, FFT, and Merge sort algorithms using CUDA
- Design big data operations and interpretation algorithms on the Tehran urban traffic data.
- Recommendation system to predict unanswered questions regarding answered ones for all students of a platform (Using K-Nearest Neighbor, Item Response Theory(IRT), Matrix Factorization, and Ensemble methods)
- Design the multi-modal models to classify the state of movie characters regarding the frames and subtitles (Using CNN and Transformer-based models)

LANGUAGES

- Persian - Native
- English - Upper-Intermediate

SKILLS

• PROGRAMMING

- Python, C++, OOP, SOLID principles
- Data libraries: Numpy, Pandas, Matplotlib, Scipy, Seaborn, NLTK
- ML & DL frameworks: Pytorch, Tensorflow(keras), Opencv, Scikit-learn, ONNXRuntime, TensorRT
- Big data: Spark processing and
- MLOps: MLflow, Streamlit
- LLMs: LangChain, Hugging Face
- RESTful API tools: Flask, FastAPI
- ORM : SQLAlchemy
- Database: PostgreSQL, MySQL

• ARTIFICIAL INTELLIGENCE

- Preprocessing: PCA, Z-Score, Moving average, Kalman Filter, Augmentation, Embedding, TF-IDF
- Machine learning:
 - Supervised: Decision Tree, Random Forest, SVM, KNN, Regression
 - Unsupervised: K-means clustering, hierarchical clustering, PCA
- Deep learning:
 - Vision: CNNs like ImageNet, VGG, AlexNet, Inception. Transformer-based like ViT, SwinT. R-CNN families, and YOLO for recognition and detection. UNET-based models for segmentation
 - 3D-Vision: SLAM and Visual Odometry, Depth estimation, and image matching models
 - NLP: LLMs like BERT and ParsBERT. RNN, LSTM, and Tokenization and embedding encoding
 - Relational data: Graph optimization and GNNs

• MATHEMATICS

- Linear Algebra, Matrix & Tensor decomposition
- Statistical & Probability
- Optimization

PUBLICATIONS

Kazaj PM, Koosheshi M, **Shahedi A**, Sadr AV. U-Net-based models for skin lesion segmentation: More attention and augmentation. arXiv preprint arXiv:2210.16399. 2022 Oct 28.

Shahedi A, Seyedin S. ChatParse: A New Application for Persian Chatbot. International Journal of Information & Communication Technology Research (2251-6107). 2023 Apr 1;15(2).

Nezhad M.M., Rouhani S., Mohammadi N. et al. A unified GRU model for cryptocurrency price prediction and harsh price movement detection using enhanced sentiment analysis. Sci Rep (2026). <https://doi.org/10.1038/s41598-026-46271-w>

RELATED COURSES

• Bachelor

- Introduction to Machine Learning: (Grade: A+)
- Advanced programming (Advanced C++, Python, and relevant data libraries like Pandas, Numpy, Scipy, Matplotlib, and OpenCV) : (Grade: A)

• Master

- Statistical (Machine) learning : (Grade: A)
- Deep learning : (Grade: B)
- Big data analysis (Work with big data algorithms using Linux OS and Spark framework : (Grade: A)

• Miscellaneous

- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization (Coursera)
- Convolutional Neural Networks(CNN) (Coursera)
- AImedic courses and workshops which cover several Machine learning and Deep learning concepts