# EMAD (NEMATOLLAH) SAEIDI

MIAAI Group, Wr. Neustadt, Austria
LinkedIn GitHub GoogleScholar nemat.saeidi@gmail.com, nematollah.saeidi@dp-uni.ac.at
Iran +989132120527

## EDUCATION

- **PhD Program in Artificial Intelligence,** University of Isfahan, Isfahan, Iran (2019-2026)
  - Thesis: Content-based Medical Image Retrieval Using Graph Neural Networks
- **Master of Artificial Intelligence,** University of Isfahan, Isfahan, Iran (2015-2017)
  - Thesis: Learning Multi-Objective Binary Features for Image Representation and Recognition
- **Bachelor of Software Engineering,** Islamic Azad University Najaf Abad, Isfahan, Iran (2010-2013)
  - Thesis: Intelligent Agent-based Social Simulation Model using Reinforcement Learning

## SKILLS AND QUALIFICATIONS

**Languages:** English C1, German A2
**Programming Languages:** Python, Matlab, NetLogo
**ML/DL:** PyTorch, Ollama LLM, Hugging Face, RAG pipelines, Prompt Engineering, Transformers, TensorFlow, Keras, Scikit-learn
**Computer Vision:** OpenCV, Detectron2, ImageAI, Darknet
**Data Analysis:** NumPy, Pandas, Matplotlib, Tableau
**DevOps:** Git, Pytest, Flask-RESTful, Postman
**Databases & Search:** SQL Server, Elasticsearch, Faiss, ChromaDB
**Web Development:** Bootstrap, CSS, JavaScript, WordPress
**Tools/IDEs:** PyCharm, Jupyter, Anaconda
**OS:** Linux, Windows

## PROFESSIONAL EXPERIENCE

**AI Engineer, *Intelligent Control & Processing Co., Tehran, Iran (Hybrid)*** (Oct 2025- -)
- Developed local RAG-based Voice Chat using LangChain, Ollama LLM, JSON/ChromaDB, and Sentence Transformers
  - Applied Few-Shot prompting and conversation memory to handle dialogues in voice mode
  - Integrated Whisper for STT → RAG-enhanced LLM generation → Coqui TTS for full speech pipeline
- Implemented real-time speaker recognition systems using NVIDIA NeMo Titanet and Resemblyzer models, integrating voice activity detection and acoustic feature extraction
- Implemented real-time face recognition pipelines with YOLO for detection and models like ArcFace ResNet100 and InsightFace

**AI Researcher, *MIAAI, Danube Private University, Austria* (*Hybrid*)** (Sep 2023- -)
- Content-based Medical Image Retrieval Using Graph Neural Networks
- Graph neural networks, Foundation models, Histopathology image analysis, Generative models

**Marketing Data Scientist, *FANAP Co., Tehran, Iran* (*Remote*)** (Jul 2021-Sep 2023)
- Collaborated with cross-functional teams to troubleshoot and optimize the performance of 10+ deployed AI services
- Designed and executed performance evaluations to assess model accuracy, speed, and reliability
- Drafted RFPs and developed business plans to support initiatives within the AI open innovation ecosystem
- Authored technical articles and research briefs for the FANAP Research Team, promoting knowledge sharing and innovation

**Data Scientist, *FANAP Co., Tehran, Iran (Hybrid)***

- **Medical image analysis and the implementation of a medical image search engine** (Dec 2022- Sep 2023)
  - Medical image retrieval, image classification, medical images, attention-based adversarial variational graph autoencoder, pre-trained models, approximate nearest neighbors search algorithm
- **Contour Drawing for a Robot Motion Planning System** (Mar 2022- Jul 2022)
  - Contour drawing using image processing techniques to apply to a drawing robot
- **Implemented an object detection app with REST API** (Sep 2020- Jul 2021)
  - Object detection and segmentation frameworks, few-shot models, transfer learning
- **Automatic Number Plate Recognition System** (Jan 2021-Jan 2021)
  - Vehicle registration, vehicle data search, and display of top records based on license plates
- **Implemented a video surveillance-based attendance and registration app with REST API** (Jan 2021-Mar 2021)
- **Implemented a visual search app with REST API** (Jan 2020-Sep 2020)
  - Object detection and recognition, color extraction, image web crawler, transfer learning, approximate nearest neighbor search
- **Implemented a value creation and a clustering library** (Aug 2019-Jan 2020)
  - SaaS Metrics and KPIs, customer analysis and segmentation, cluster ensembles, numeric and categorical clustering for the grocery retail industry
- **Worked on clustering and extracting customer behavior patterns** (Aug 2019-Jan 2020)
  - Credit card transactions for fraud detection (money laundering, tax evasion)
- **Implemented a recommendation system** (Mar 2019-Aug 2019)
  - Developed a sequence-to-sequence model for ranking
  - Developed association rules, hybrid, content, and collaborative filtering, clustering customers, as well as feature engineering for candidate generation

- **Worked on marketing Analysis and product prediction** (Oct 2018-Feb 2019)
  - Provided strategic direction to the company on different datasets (using CatBoost, XGBoost, lightGBM, ensemble methods, MLP)
- **Worked in an agile environment** (Oct 2018- Sep 2023)
  - With daily standups, sprint retrospectives, backlog groomings, and continuous integrations built within two-week sprints

## HONORS & AWARDS

- **Ernst Mach Grant of the Österreichische Austauschdienst (OeAD)** (2024)
Research stay at Medical Image Analysis & Artificial Intelligence (MIAAI), Danube Private University (DPU), Austria
- **Ernst Mach Grant of the Österreichische Austauschdienst (OeAD)** (2023)
Research stay at Medical Image Analysis & Artificial Intelligence (MIAAI), Danube Private University (DPU), Austria
- **Ranked third in the call to solve business challenges,** FANAP Co, Tehran, Iran (2021)
- **Ranked second in the graduating class in Master of Computer Engineering**, Department of Artificial Intelligence Engineering, University of Isfahan, Isfahan, Iran (2017)
- **Top two percent of the graduated students**, Ranked top 3rd among 158 graduated students in Computer Engineering, Department of Computer Engineering, Islamic Azad University Najaf Abad, Iran (2013)
- **Top Student- Scholarships for two semesters**, Islamic Azad University Najaf Abad (2011)

## ACTIVITIES

- **Teaching Assistant, University of Isfahan, Iran**
  - Machine learning, Statistical Pattern Recognition, and Algorithm Design courses under supervision of Dr.Peyman Adibi (Jan 2016-Jun 2017)
- **Professional Training**
  - Finetuning Large Language Models, DeepLearning.AI (Mar 2025)
  - Applied Plotting, Charting & Data Representation in Python, University of Michigan, Coursera (Oct 2022)
  - Python Project for AI & Application Development, IBM (Sep 2022)
  - Applied Machine Learning in Python, University of Michigan, Coursera (May 2022)
  - IPM Advanced Data Science Summer School ($ADS^3$), IPM Farmanieh building, Tehran, Iran, Aug 18$^{th}$-Aug 23$^{th}$ (Aug 2018)
  - Fourth IPM Advanced School on Computing: Artificial Intelligence, IPM Farmanieh building, Tehran, Iran, Aug 22$^{th}$-Aug 26$^{th}$ (Aug 2020)
  - IPM Elementary Data Science Summer School ($EDS^3$), IPM Farmanieh building, Tehran, Iran, June 30$^{th}$-July 5$^{th}$ (Jun-Jul 2018)

## PAPERS

- Mahbod, A., **Saeidi, N.**, Hatamikia, S., Woitek, R., 2025. ***Evaluating Pre-trained Convolutional Neural Networks and Foundation Models as Feature Extractors for Content-based Medical Image Retrieval***. Engineering Applications of Artificial Intelligence, https://doi.org/10.1016/j.engappai.2025.110571.
- Saeidi, N.; Torbati, N.; Woitek, R.; Mahbod, A, 2025. ***Integrating Foundation Model Features into Graph Neural Network and Fusing Predictions with Standard Fine-Tuned Models for Histology Image Classification***. Bioengineering, 12, 1332. https://doi.org/10.3390/bioengineering12121332
- Abedinzadeh Shahri, M., **Saeidi, N.**, Hajipour, V., 2024. ***Incorporating Shape Dependent Power Law in Motion Planning For Drawing Robots***. Robotics and Autonomous Systems, 182, 104801.
- **Saeidi, N.**, Karshenas, H., Shoushtarian, B., Hatamikia, S., Woitek, R. and Mahbod, A., 2024. ***Breast Histopathology Image Retrieval by Attention-based Adversarially Regularized Variational Graph Autoencoder with Contrastive Learning-Based Feature Extraction***. arXiv preprint arXiv:2405.04211.
- **Saeidi, N.**, Karshenas, H. and Mohammadi, H.M., 2019. ***Single Sample Face Recognition Using Multicross Pattern and Learning Discriminative Binary Features***. Journal of Applied Security Research, 14, 2, 169-190.
- **Saeidi, N.**, Karshenas, H. and Mohammadi, H.M., 2017, October. ***Learning multi-objective binary features for image representation***. In 2017 7th International Conference on Computer and Knowledge Engineering (ICCKE), Mashhad, pp. 47-52. IEEE.
- **Saeidi, N.**, Torabi, M., 2022. ***Artificial Intelligence and Clinical Decision Making: Approaches and Challenges***. Journal of Applied Intelligent Systems and Information Sciences, 3, 2, 43-55.
- **Saeidi, N.**, Shahamat, H., 2021. ***Attention-Based and Positional-Aware Neural Networks for Next-Item Recommendation.*** Journal of Applied Intelligent Systems and Information Sciences, 2, 1, 29-40.
- **Saeidi, N.**, Karshenas, H., Noorafza, N. and Mahdavinejad, M.S, 2016, June. ***Survival of Agents in Multi-Agent Systems Based on Sugarscape Model Using Reinforcement Learning***, In the International Conference on New Researches in Engineering Sciences, Tehran

## References


- **Amirreza Mahbod**
  - Assistant Professor, Medical Image Analysis & Artificial Intelligence (MIAAI)**,** Danube Private University (DPU), Vienna, Austria amirreza.mahbod@dp-uni.ac.at
- **Vahid Hajipour**
  - Assistant Professor, Industrial Engineering, Altınbaş University, İstanbul, Turkey
  - Head of Research Center, FANAP Co., Tehran, Iran vahid.hajipour@altinbas.edu.tr