

Sadra Berangi

STUDENT · ML ENGINEER

Tehran, Iran

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Summary

Undergraduate student in Computer Science at Shahid Beheshti University (GPA: 18.2/20, Top 0.1% national ranking). Passionate about **reinforcement learning**, **computer vision**, **robotics**, and **medical AI**, with experiences in both research and real-world projects. Co-authored multiple papers with Dr. Armin Salimi-Badr, including works on **DoGNet** (IEEE Access), **DRL for stock trading** (ICCKE 2024), and **explainable AI for Parkinson's diagnosis** (Springer). Also contributed to several other AI projects as part of collaborative research. Experienced teaching assistant in many courses such as AI and robotics courses. Certified with **IELTS 7.5**, and eager to continue advanced studies while contributing to the progress of science and knowledge in artificial intelligence.

Education

Shahid Beheshti University (National University of Iran)

Tehran, Iran

B.S. IN COMPUTER SCIENCE AND ENGINEERING

2021 – Present

- **Cumulative GPA: 18.2/20**
- Relevant Coursework: **Deep Reinforcement Learning (19.83/20)**, **Artificial Intelligence and Expert Systems (19.93/20)**, **Fundamental of Computer Vision (18.75/20)**, **Fundamentals of Robotics (18.92/20)**, **Advanced Programming (20/20)**, **Signals and Systems (19.9/20)**, **Introduction to Machine Learning (17.4/20)**, **Robot Construction Lab (20/20)**.

Publications

Fuzzy-DogNet: A Lightweight and Interpretable Deep Unstructured Neuro-Fuzzy System based on Band-Pass Filters for Traffic Sign Recognition

IEEE Access

JOURNAL ARTICLE

- S.Berangi; M.Parchami; A.Salimi. DOI:10.1109/ACCESS.2025.3606963

A Deep Reinforcement Learning Approach Combining Technical and Fundamental Analyses with a Large Language Model for Stock Trading

ICCKE (IEEE)

CONFERENCE PAPER

- M.Veisi; S.Berangi; M.Shahbazi; A.Salimi. DOI: 10.1109/ICCKE65377.2024.10874515

An Explainable Deep Learning Method based on Sinc Filters to Diagnose Parkinson's Disease Severity by Gait Cycle Analysis

Journal of Ambient Intelligence and Humanized Computing (Springer)

UNDER REVIEW

- A.Salimi; M.Veisi; S.Berangi. DOR: 10.48550/arXiv.2502.17463

Academic and Research Experience

Robotics and Intelligent Autonomous Agents (RoIAA) Lab, SBU

Tehran, Iran

RESEARCH ASSISTANT

2023 – Present

- **Publications:** Co-authored multiple papers with Dr. Salimi-Badr on RL, computer vision, and biomedical AI.
- **UAV Project:** Built a UAV system combining CNN-based vision with RL-based controller on DJI Mavic 2 Pro for real-time aerial detection and navigation.
- **Stock Trading Project:** Developed a DRL framework (LSTM+PPO) with FinBERT sentiment embeddings for portfolio management, published in ICCKE 2024.
- **Fuzzy-DoGNet Project:** Designed a lightweight deep model with DoG-based feature extraction for traffic sign recognition, published in IEEE.
- **SincPD Project:** Proposed an explainable deep learning method using Sinc filters for Parkinson's disease severity diagnosis via gait analysis.

Shahid Beheshti University

Tehran, Iran

TEACHING ASSISTANT

- Fundamentals of Robotics, Dr.Salimi-Badr
- AI and Expert Systems, Dr.Salimi-Badr
- Signals and Systems Course, Dr. Salimi-Badr
- Principles of Compiler Design Course, Dr. Alidoost Nia
- Advanced Programming Course, Dr. AliAkbar
- Advanced Programming Course, Dr. Vahidi
- Formal Languages and Automata Theory Course, Dr. Ghavami Zadeh
- Introduction to Programming Course, Dr. AliAkbar

Work Experience

Hezar Makian Khazar

JUNIOR ML AND VISION ENGINEER

Rasht, Iran
Jun. 2024 - Present

- Developed computer vision pipelines using **CNNs and transfer learning** for UAV-based image recognition and classification.
- Integrated **reinforcement learning controllers** with drones to enhance autonomous navigation and decision-making.
- Processed and curated large-scale aerial image datasets for training and evaluation of ML models.
- Deployed machine learning applications on **Linux-based embedded systems**, ensuring reliable real-time operation.
- Collaborated with a small robotics team to apply **state-of-the-art deep learning and RL techniques** in real-world UAV projects.

Certificates

- 2023 **ML**, DeepLearning.ai
- 2023 **Deep Learning**, DeepLearning.ai
- 2023 **Django**, Meta
- 2022 **Advanced Python**, Shahid Beheshti University, Scientific Association of Computer Engineering
- 2022 **Introduction to Python**, Shahid Beheshti University, Scientific Association of Computer Engineering
- 2022 **Introduction to Linux**, Shahid Beheshti University, Scientific Association of Computer Engineering
- 2023 **Security Hackathon**, Quera
- 2022 **Front-End**, Shahid Beheshti University, Scientific Association of Computer Engineering

Honors & Awards

- 2024 **Finalist**, Nation Teach olympiad in Image processing Iran
- 2021 **top 0.1%**, ranking in the national university entrance exam (Konkur) Iran
- 2020 **Passing the first stage**, Qualified for the first stage of National Physics Student Olympiad Iran

Skills

TECHNICAL SKILLS

- Programming: **Python**, C/C++, Java.
- ML/DL Frameworks: **PyTorch**, TensorFlow, Scikit-learn.
- Computer Vision: **OpenCV**, CNNs, attention-based models.
- Reinforcement Learning: PPO, DQN, imitation learning.
- Robotics & Simulation: **Webots**, Gazebo, AirSim; deployment on **NVIDIA Jetson**.
- Data Processing: NumPy, Pandas, MATLAB.
- Systems: **Linux**, Git, Docker, ONNX.

LANGUAGE SKILLS

- Proficient in **English (IELTS 7.5)**.
- Native speaker of **Persian**.