Ali Behdarnejad

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About me

Friendly and engaging team player with nice creativity and ability to work independently. I pay good attention to my work because I love my career. I like to experience new things, so I have a good knowledge of state-of-the-art AI as well as classic AI.

Skills & Abilities

- ***Programing Language:*** Advanced with Python and familiar with C, C++, Java, and GO.
- ***Experience with AI libraries such as*** Pytorch, Torchvision, OpenCV, Sklearn, NumPy, pandas, hugging-face, hydra and spark.
- ***AI algorithms and concepts:*** Deep Learning, NLP, Deep reinforcement learning, Computer Vision, Machin learning, Big Data and GanAI.
- ***Tools:*** git, Ducker, anaconda, Gitlab, Elasticsearch, Django, OpenStack, VScode, Linux

Experience

AI and robotic researcher assistant / RoIAA lab

Sep 2024_Jan 2026 - 1 year and 4 months

As a robotic researcher, I worked on vision language action models (VLAMs) for generalist robots in manipulation tasks and added RL to them to learn new tasks that weren't in their training dataset. I also improved it to do more complex tasks for a longer time and added thinking ability to them. We improved cutting-edge VLAMs from leading researchers from MIT and Stanford, like HPT.

Software developer / Sahand advance technology

Jol 2023_Sep 2023 - 3 months

I worked in the company as a software developer to write Java programs on Android OS for POS devices and repair customer POS with software problems. It was a great experience in a big company, but I didn't continue to follow my interests in AI.

Cloud admin and developer / Iranian data support

Mar 2023_Jol 2023 - 6 months

As an intern, my responsibility in the company was running OpenStack on the server and creating visual machines for the customer and researching NoSQL databases. I also worked on a Django website in this company.

Education

Master of AI and robotic engineering
Shahid Beheshti university (SBU)

Sep 2023 – Dec 2025

I learned a lot about AI. At the M.Sc., I had more than 20 project and 7 article implementations from different topics of AI, such as deep learning, deep RL, NLP, LLMs, VLMs, computer vision, and image processing, some of which are available at my GitHub I also been TA for DRL and big data.

Bachelor of computer science
Qom university

Sep 2019 – Sep 2023

In this university I learned a lot about the fundamentals of CS such as programing, algorithms, compiler, OS, network and software engineering.

Languages

Advance English with127 Duolingo unofficial test score and ***native Persian*** speaker

Publication

P-Explo: Periodic Exploration before Convergence in Deep Reinforcement Learning. In this work we suppose if we make exploration of an agent like a period of learning (exploitation) and exploration, it could lead to better generalization. We run 48 experiments in different settings to have a fair comparison, and our method outperforms non-periodic exploration 3.5 times. We use DQNs and inject periodic exploration E-greedy and Boltzmann action selection strategies to test our hypothesis.

Highlight Projects

Reinforcement fine-tuning vision language action models—in this project I'm working on state-of-the-art technology in our field, like VLAs and VLMs, to create generalist robots that can learn like humans and improve themselves. In this project I'm using GitLab, Docker, Genesis, Torch, Transformer, and TRL, and I would be so happy to share technical details as soon as its paper is published.
Agentic RAG with Elasticsearch—was a project in which I learned a lot of forms. I had 2 challenges: the first one was my big dataset, and the second one was the accuracy of retrieval, and it had to be local without internet. I addressed the first one by chunking my dataset and using a JSON file. Also, I added important information to the dataset in QA format. For the second problem, I not only used cosine similarity of the embeddings, but I also compared lexical similarity to cover the weakness of only embedding similarity. After this, the accuracy of the model improved by 145 percent.
Mavc2 Object Detection—In this project I used classic computer vision algorithms to preprocess the image for a CNN to classify images and detect some objects in a Webots simulator.

Activities and Interests

Football, Psychology, futsal, swimming, gaming, traveling, talking with people and learning new things, art, hiking, and of course AI.