Ali Behdarnejad

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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

Profile

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.

Experience

RoIAA lab / AI and robotic researcher *Dec 2024 – present*

- As a robotic researcher I worked on Vison language action models (VLAMs) for generalist robots in manipulation tasks and add RL to them to learn new task the wasn't in its training dataset and remove its reliance on datasets also improve it to do more complex tasks for a longer time and adding thinking ability to them, I used cutting age VLAMs form leading researcher form MIT and Stanford like HPT to address weakness of existing VLAMs like depending on dataset.

Sahand advance technology / Software developer *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 don't continue to follow my interests in AI.

Iranian data support / Cloud admin and developer *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 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 A.Ms. I have more than 20 project implementation and 7 Article implementation from different topic of AI such as Deep Learning, Deep RL, NLP, LLMs, VLMs, CV and Image processing which some of them are available at my GitHub.

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.

Publication

P-Explo: Periodic Exploration before Convergence in Deep Reinforcement Learning. *In this work we suppose if we make exploration of an agent like periods of learning and exploration could lead to better generalization, we run 48 experiments we different settings to have fare comparation and our method 3.5 times out performs non-periodic exploration, we use DQNs and inject periodic exploration E-greedy and Boltzmann action selection strategy to test our hypothesis.*

Highlight Projects

Reinforcement finetuning Vison 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 which can like human learning 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. Here I have 2 challenges first one was my big dataset, second one was accuracy of retrieval I address first one with chunking my dataset and use Jason file also I add important information to the dataset in QA format for second problem I not only I used consin similarity of the embeddings I also compare lexical similarity to cover weakness of only embedding similarity after this accuracy of the model has improved by 145 present which is also improvable.
Mavc2 Object detection in this project I used classic computer vision algorithms to prepresses the image for a CNNs to classify images and detect some objects in a Webots simulator.

Activities and Interests

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