Fatemeh Bahrani

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Summary

My overarching research goal is to develop data-efficient, generalizable, and trustworthy robot learning frameworks that can operate robustly in complex, sequential settings. A central theme of my research vision is introducing structure into learning-based robotics. Rather than relying purely on end-to-end data-driven policies, I am interested in leveraging additional sources of guidance, such as prior knowledge, auxiliary modalities, and richer supervision signals, to support enhanced data curation, representation learning, policy optimization, and inference-time reasoning.

Education

B.Sc. **Sharif University of Technology**, Computer Engineering

- GPA: 15.6/20
- Coursework: Algorithms and Data Structure, Artificial Intelligence, Computer Architecture, Signals and Systems, Computer Simulation, Mobile Programming, Software Engineering, Discrete Structures, Systems Analysis and Design
- BSc Project: Development of an Android platform for elderly people to help them with their medical issues, maintenance, gathering at social events, etc.

Publications

* Equal Contributions.

GABRIL: Gaze-Based Regularization for Mitigating Causal Confusion in Imitation Learning [Website] [Paper]

A. Banayeeanzade*, ***F. Bahrani****, Y. Zhou, E. Bıyık. IROS 2025

Imitation learning, or more broadly supervised learning, often suffers from shortcut learning and misattribution of **spurious correlation** when trained using empirical risk minimization. In this project, we use the human gaze data together with the expert demonstrations to train a **behavioral cloning** agent which mitigates the causal confusion problem. Our proposed method outperforms other comparable baselines in Atari environments as well as a more realistic **self-driving** task in CARLA simulator.

AutoFocus-IL: VLM-based Saliency Maps for Data-Efficient Visual Imitation Learning without Extra Human Annotations [Website] [Paper]

L. Gong, ***F. Bahrani***, Y. Zhou, A. Banayeeanzade, J. Li, E. Bıyık ICRA 2026

While traditional imitation learning suffers from causal confusion, gaze-based IL solves this by utilizing an expensive solution of collecting human eye gaze data. However, **AutoFocus-IL** resolves this issue by getting a **saliency map annotated by a VLM** to retain the benefits of gaze-based IL without incurring the extra data collection costs.

Psychological steering in LLMs: An Evaluation of Effectiveness and Trustworthiness [Paper] [Code]

A. Banayeeanzade*, A. N. Tak*, ***F. Bahrani***, A. Bolourani, L. Blas, E. Ferrara, J. Gratch, S. P. Karimireddy Submitted to ACL 2026

In this project, we present **PsySET**, a *psychologically-informed* benchmark for assessing how effectively and reliably **large language models (LLMs)** can be steered across emotional and personality dimensions. We compare diverse steering methods, including **prompting**, **fine-tuning** (via **DPO** and **SFT**), and **representation engineering** through **vector injection**, to understand their impact on affective and trait-like behaviors. Our analysis highlights key trade-offs between control, consistency, and text quality, while also examining **trustworthiness** factors such as **safety**, **truthfulness**, **fairness**, and **ethical alignment**.

Research Interests

Robot Learning - Learning from Human Demonstration - Large Vision Language Models - Trustworthy AI - Interpretability in ML - Human Robot Interaction (HCI) - Human Robot Interaction (HRI).

Experiences

University of Southern California, Visiting Researcher — Los Angeles, CA — Oct 2024 – Present
Visiting researcher in Lira Lab

University of Southern California, Visiting Researcher — Los Angeles, CA — Apr 2025 – Oct 2025
Visiting researcher in FORTML Lab

University of Southern California, Visiting Researcher — Los Angeles, CA — Sep 2023 – Oct 2024
Visiting researcher in HaRVI Lab

Danesh Afzare Naroon Sharif, Software Developer Intern — Tehran, Iran — 2022 – 2023
Software Developer Intern at Danesh Solutions company, working on "Aziz" project

Roshangar High School, Part-time Remedial Mathematics Teacher — Tehran, Iran — 2018 – 2021
Help students weaker in mathematics to overcome learning gaps and challenges

Skills

Programming Languages: Python, Java, C/C++, JavaScript, R, Arduino

Frameworks & Libraries: PyTorch, Scikit-learn, Numpy, Pandas

Developement: Git, Docker, Django, Android, Linux, HTML, CSS, SQL, Verilog, Latex, Unity

Reviewing Experiences

Conference Reviews

ICRA 2026 (2 paper reviews)

References

Prof. Erdem Bıyık, Supervisor at University of Southern California on GABRIL and AutoFocus-IL projects
Prof. Sai Praneeth Karimireddy, Supervisor at University of Southern California on PsySET project
Prof. Jafar Habibi, BS's supervisor at Sharif University of Technology