

Bardia Ardakanian¹

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EDUCATION

Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran
B.Sc., Computer Engineering, AI & Robotics — Sep 2019 - Sep 2024
GPA: **17.68** / 20 (**3.66**/4) — Last Two Years GPA: **18.47/20** (**3.84**/4.0)
Project: Unsupervised Camera-Lidar Fusion for Fast Region Proposal (Supervisor: Mahdi Javanmardi)

RESEARCH EXPERIENCE

Research Assistant, Robotics Lab, Amirkabir Univ. of Tech. — Sep 2023 - now

- Unsupervised Camera Lidar Fusion for Fast Region Proposal - B.Sc. Project
- Skills: Python, Pytorch, SciPy

Research Assistant, Hardware Lab, Amirkabir Univ. of Tech. — June 2023 - now

- Implemented AI-driven cache replacement policies using reinforcement learning and clustering algorithms, optimizing third-level cache performance.
- Skills: C/C++, Gem5

Research Collaborator, University of Toronto, ECE Dept. — Sep 2022 - Sep 2023

- **Active Learning for Object Detection**: Trained SSD networks using active learning with VAEs and Stable Diffusion to efficiently filter irrelevant images.
- **Super-Resolution via Explainable AI**: Enhanced SwinIR model robustness on blurry and noisy images using XAI techniques.
- **Semi-Supervised Semantic Segmentation**: Improved NVIDIA's SemanticGAN accuracy by generating diverse training data with CycleGAN.
- **Skills**: Python, PyTorch, TensorFlow, NumPy, OpenCV

PUBLICATIONS & TECHNICAL REPORTS

- Adarsh Salagame, Harin Kumar Nallaguntla, **Bardia Ardakanian**, Eric Si-hite, Gunar Schirner, Alireza Ramezani. "Reinforcement Learning-Based Model Matching to Reduce the Sim-Real Gap in COBRA." Under review at *American Control Conference (ACC)*, 2025. Available at: [Link](#).
- Bachelor's Thesis: "Unsupervised Camera-LiDAR Fusion for Fast Region Proposal" (Written in Farsi). Available at: Amirkabir University Digital Library. Supervisor: Mahdi Javanmardi.
- **Bardia Ardakanian**. "Development of Natural and Artificial Intelligence - Post-Selection Dialogue: Challenges to Post-Selection." *IEEE Cognitive Development Systems Newsletter*, vol. 18, no. 2, pp. 6-11, 2024. Available at: [Link](#).

LANGUAGES & TEST SCORES

Persian (Farsi): Mother tongue (Native)
English: Professional working proficiency (TOEFL: 111 - R28 - L27 - S27 - W29)
GRE: 325 (168Q, 157V), 4 AWA

¹Long Version of CV: <https://bardia-ardakanian.github.io/CV/>

TECHNICAL SKILLS

- **Programming Languages:** Python, C, C++, Java, C#, Go, R, Shell, SQL
- **Frameworks & Libraries:** TensorFlow, PyTorch, Keras, OpenCV, ROS, Scikit-learn, NumPy, SciPy, Pandas, Matplotlib, Django, Angular, Spring, Maven
- **Databases:** PostgreSQL, MySQL, Oracle DB, MongoDB, Redis, Elasticsearch
- **Tools & Technologies:** Git, Docker, Kubernetes, L^AT_EX; Ubuntu, Fedora, Kali

TEACHING EXPERIENCE

Course	Role	Supervisor(s)	Term(s)
Data Structures & Algorithms	Instructor ²	Dr. E. Nazerfard	Fall 2021
Fundamentals of Linux	Instructor	Amirkabir LinuxFest	Fall 2022
Linux Control Groups	Instructor	Amirkabir LinuxFest	Fall 2022
Database Systems	Head TA ³	Dr. H. Shahriari	Spr & Fall 2023
Compiler Design	Head TA	Dr. S. Momtazi	Spr 2023 & Fall 2024
Computer Architecture	Head TA	Dr. H. Farbeh,	Spr 2022–Spr 2023
Algorithm Design	Head TA	Dr. A. Bagheri,	Fall 2022
Discrete Mathematics	Head TA	Dr. M. Chehreghani	Fall 2021 & Fall 2022
Applied Linear Algebra	Head TA	Dr. M. Chehreghani,	Spr 2022
Advanced Programming	Head TA	Dr. H. Zeinali	Fall 2021 & Spr 2021
Computational Intelligence	TA ⁴	Dr. M. Ebadzadeh	Spr 2023
Data Structures & Algorithms	TA	Dr. S. Shirali-Shahreza	Spr 2022

WORK EXPERIENCE

Machine Learning Engineer Sep 2022 – Present

Sepid Daneh Zarvan Toos Co., Tehran/Mashhad, Iran

- Developed robot control systems for sorting and packaging robotic arms.
- Deployed business analysis and provided new business strategies.
- Optimized delivery service routing and distribution.
- Synchronized the packaging line for core operations like sorting and packaging.

Software Developer

Jul 2022 – Sep 2022

System Group Co., Tehran, Iran

- Developed a compensation module for Rahkaran ERP.
- Redesigned the user interface using Angular, JavaScript and HTML/CSS.

Backend Developer

Jul 2021 – Jul 2022

Fanap Soft Co., Tehran, Iran

- Led migration of WePod infrastructure to microservices, resulted in 240% speedup.
- Developed critical modules for system recovery.

HONORS AND AWARDS

- Ranked in the top 20% of undergraduate students in Computer Engineering, Amirkabir Univ. of Tech. 2024
- Among the top 3% in the National Entrance Exam for Graduate Studies in Computer Engineering 2024
- Elected as Head of Student Affairs on the Student Guild Council of the Department of Computer Engineering, Amirkabir Univ. of Tech., CE Dept. 2020
- Lead Coordinator at annual events through the Student Scientific Chapter, Amirkabir Univ. of Tech., CE Dept., 2020
- Among the top 1% in the National Entrance Exam for Undergraduate Studies in Math & Physics 2019

²As an **Instructor**, delivered lectures, prepared course materials, supervised TAs, and managed course administration.

³As a **Head Teaching Assistant**, coordinated class schedules, prepared instructional materials, supervised TAs, managed assignments and exams, and supported student learning.

⁴As a **Teaching Assistant**, supported student learning through lab sessions, office hours, and assignment grading.