

# Bardia Ardakanian<sup>1</sup>

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## EDUCATION

**Amirkabir University of Technology** (Tehran Polytechnic), Tehran, Iran

**B.Sc.**, Computer Engineering, AI & Robotics — Sep 2019 - Sep 2024

GPA: **17.73** / 20 (**3.70**/4) — Last Two Years GPA: **18.47/20** (**3.90**/4.0)

Project: Unsupervised Camera-Lidar Fusion for Fast Region Proposal (Supervisor: Mahdi Javanmardi)

## RESEARCH EXPERIENCE

**Research Assistant**, Autonomous and Intelligent Systems 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 Design 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 Sihite, 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: [Link](#).
- Bachelor's Thesis: "Unsupervised Camera-LiDAR Fusion for Fast Region Proposal" (Written in Farsi). 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 — Quant: 168 (83<sup>rd</sup> percentile), Verbal: 157 (73<sup>rd</sup> percentile), AW: 4.5 (83<sup>rd</sup> percentile)

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<sup>1</sup>Long 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<sup>A</sup>T<sub>E</sub>X; Ubuntu, Fedora, Kali

## TEACHING EXPERIENCE

| Course                       | Role                    | Supervisor(s)           | Term(s)               |
|------------------------------|-------------------------|-------------------------|-----------------------|
| Data Structures & Algorithms | Instructor <sup>2</sup> | 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 <sup>3</sup>    | 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. Chehrehgani      | Fall 2021 & Fall 2022 |
| Applied Linear Algebra       | Head TA                 | Dr. M. Chehrehgani,     | Spr 2022              |
| Advanced Programming         | Head TA                 | Dr. H. Zeinali          | Fall 2021 & Spr 2021  |
| Computational Intelligence   | TA <sup>4</sup>         | 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

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

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

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