

Arad Maleki Toolabi

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EDUCATION

Sharif University of Technology

- *B.Sc. in Computer Engineering* | Current GPA: 19.06/20

Sep 2020 – Present

Tehran, Iran

PUBLISHED PAPERS

Scanning Trojaned Models Using Out-of-Distribution Samples

Accepted at NeurIPS 2024

Hossein Mirzaei, Ali Ansari, Bahar Dibaei Nia, Mojtaba Nafez, Moein Madadi, Sepehr Rezaee, Zeinab Sadat Taghavi, Arad Maleki, Kian Shamsaie, Mahdi Hajjalilue, Jafar Habibi, Mohammad Sabokrou, Mohammad Hossein Rohban

PAPERS SUBMITTED FOR PUBLICATION

A Contrastive Teacher-Student Framework for Novelty Detection under Style Shifts

Submitted to ICLR 2025

3rd Author, Authors anonymized due to double-blind review

A Survey on Multi-GPUs¹

Submitting to ACM POMACS journal

Atiyeh Gheibi, Arad Maleki, Amirsaeed Ahmadi, Masoud Mohammadi, Sahand Zoufan, Mahdi Alinejad, Mohammad Alizadeh, Komeil Yahyazadeh, Negar Akbarzadeh, Sina Darabi-Moghadam, Shaahin Hessabi, Hamid Sarbazi-Azad

PatchGuard: Adversarially Robust Anomaly Detection and Localization

Submitted to CVPR 2025

2nd Author, Authors anonymized due to double-blind review

PAPERS IN PROGRESS

Mitigating Hallucinations in LVLMS Open Text Generation

Planned for submission at TACL journal

Arad Maleki

Learning-Based Cache Bypassing in Multi-GPU Architectures

Planned for submission at MICRO 2025

Arad Maleki, Atiyeh Gheibi, Hamid Sarbazi-Azad

RESEARCH EXPERIENCE

My research interests lie at the intersection of enhancing **Efficiency** and **Trustworthiness** in ML systems.

Research Assistant

Mar 2024 – Present

Sharif University of Technology - Prof. Sarbazi-Azad's HPCAN lab

Tehran, Iran

- Participated in research regarding Multi-GPU systems, resulting in a comprehensive survey.

Research Assistant

Sep 2023 – Mar 2024

Sharif University of Technology - Prof. Rohban's Robust and Interpretable ML lab

Tehran, Iran

- Participated in multiple research projects, resulting in a publication and two preprints submitted to top venues.

Research Intern

Jun 2023 – Sep 2023

Ruhr University Bochum

Bochum, Germany

- Remote internship under Prof. Setareh Maghsudi researching robustness in Inverse RL systems.

Research Intern

Feb 2023 – Jun 2023

Sharif University of Technology - Prof. Heydarnoori's Intelligent Software Engineering lab

Tehran, Iran

- Worked on offline large-scale workload sharing across multiple GPUs.

TEACHING ASSISTANCE EXPERIENCE

Machine Learning: Fall 2024, Spring 2024, Fall 2023 | **Intro Bioinformatics:** Fall 2024 | **Mobile:** Spring 2024

Fundamentals of Programming: Spring 2022, Fall 2021 | **Advanced Programming:** Spring 2022, Fall 2021

¹This work will be submitted by late December.

WORKING EXPERIENCE

- ML Engineering Intern** | *Danesh Solutions* Sep 2024 – Present
- Working on efficiently fine-tuning LLMs to assist Persian users seeking banking transactions, focusing on optimizing data pipelines and designing scalable model architectures tailored for production deployment.

VOLUNTARY EXPERIENCE

- Educational Content Curator** | *National AI Olympiad for high schoolers* Nov 2024 – Present
- Designing educational material on multiple topics, including Probability & Statistics, Linear Algebra, and Deep Learning, for high schoolers participating in Iran's 1st National AI Olympiad.
- Scientific Staff** | *Rayan AI Contest – Organized by Prof. Rohban* Jul 2024 – Nov 2024
- Collaborated on the design and implementation of Phase 2 of the challenge.

HONORS AND AWARDS

- Iran's Nationwide Universities Exam** | *Ranked 105th amongst more than 155,000 Students* 2020
- Iran's National Mathematics Olympiad** | *Certificate of Honorable Mention* 2019
- Iran's National Informatics Olympiad** | *Reached 3rd stage (Top 1%) in consecutive years* 2018 & 2019

SELECTED COURSEWORK

- AI & Learning:** Reinforcement Learning (Graduate, 18.2/20), Machine Learning (19.1/20), Artificial Intelligence (20/20), Linear Algebra (18.8/20), Intro to BioInformatics (20/20), Signals & Systems (18/20)
- Algorithmic:** Data Structures & Algorithms (20/20), Game Theory (20/20), Design of Algorithms (19.5/20), Theory of Machines & Languages (20/20), Discrete Structures (20/20)
- Architecture:** Computer Structure & Lang (19.1/20), Computer Architecture (18.4/20), Compiler (20/20)

SKILLS

- Programming Languages:** Java, Python, C/C++, C#, SQL, Golang, Unity
- Languages:** Persian (Native), English (Full Professional proficiency), Arabic (Elementary Proficiency)

NOTABLE PROJECTS

- BioInformatics Project** | *Python, R, BioConda, PCA*
- Completed multiple BioInformatics-related tasks such as Analyzing the impact of Social Behaviour in the context of Neurobiology
 - Used several BioInformatics tools and concepts including BLAST, DGE, RNA-Seq, and Genome Alignment
- Face Recognition** | *Python, Numpy, Matplotlib*
- Developed a notebook which inputs the image of some human faces and is expected to tell which faces are novel when prompted with the face of the same humans but in a different state (smiling)
 - Used Linear Algebra & ML concepts such as PCA, Image mean, Eigenvectors, etc.
 - Improved my theoretical knowledge of Linear Algebra as this project required some problem analysis skills
- Mini Kafka** | *Python, Docker, Go, CI/CD, Docker Compose*
- Created a small queue architecture inspired by Kafka, with features like fault tolerance and scalability
 - Used popular software engineering tools such as Docker, Docker Compose, GitHub Actions, etc.
- YoGiOh!** | *Java, LibGDX, Gradle, GSON*
- Implemented our version of the popular game Yu-Gi-Oh! with Java and the graphics library LibGDX
 - Worked in a team of 3 to contribute over 20,000 lines of code
 - Implemented OOP concepts and computer network concepts, resulting in a multiplayer game with the option to play on a connected network
- Micromaster** | *Android Studio, Java, Gradle, JUnit, Room database, GSON*
- Implemented a mobile app to help users take university courses, submit homework, and download course material
 - Implemented three entities: Lecturer, Student, and Teaching Assistant. Each entity has its own accesses and restrictions, and users interact with each other accordingly (Student submits homework, TA corrects it, etc.)