

# AMIRREZA VELAE

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## RESEARCH INTERESTS

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- Machine Learning
- Bandit Algorithms
- Reinforcement Learning
- Game Theory
- Optimization
- High Dimensional Statistics

## EDUCATION

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### Sharif University of Technology

Tehran, Iran

- Bachelor of Science, **Electrical Engineering** Sep. 2021 – Present
- Minor in **Mathematics** Jan. 2023 – Present

GPA: 17.33/20

Exp Grad: Sep. 2026

### Allameh Jafaru High School (NODET)

Marand, Iran

- Higher Secondary Education, **Math and Physics** 2018 – 2021

GPA: 18.55/20

## RESEARCH EXPERIENCES

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### Sharif University of Technology (B.Sc. Thesis)

- **Duality in Reinforcement Learning** Oct 2024 – Present  
*Supervisor:* Prof. [Hamed Shah-Mansouri](#)
  - The project is not well-defined yet, but we aim to study the duality in reinforcement learning optimization problems. We aim to find a new perspective on the problem maybe gain some interesting results.

### University of Amesterdam

- **Policy Planning in Large Language Models** July 2024 – Present  
*Supervisor:* Prof. [Mohammad Aliannejadi](#)
  - In this project, I am working on policy planning in large language models. We aim to make the language model more interpretable and context-aware.

### Max Planck Institute for Intelligent Systems

- **Learning-to-Defer Machine Learning and Bayesian Machine Learning** April 2024 – Sep 2024  
*Supervisor:* [Amin Charusaie](#) & Prof. [Samira Samadi](#)
  - In this project, I worked on a L2D. We aimed to utilize human feedback to enhance the performance of machine learning models. We have tested L2D performance on bayesian layers.

## INTERNSHIP EXPERIENCES

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### HOMA (Coud AI)

- **Open AutoML** June 2023 – Sep 2023  
*HOMA (Cloud AI)* is a cloud-based AI platform that provides a safe and secure platform for more than 10 thousand Iranian researchers to run their machine learning models.  
*Topic:* Researched on open AutoML libraries to run them on multi node multi GPU environment.

### Tabdeal

- **LLM Researcher** May 2024 – Sep 2024  
*Tabdeal* is a crypto exchange that provides a platform for more than 1 million users to trade digital currencies.  
*Topic:* I was working on RAGs for the company's chatbot, using OpenAI API.

## WORK EXPERIENCES

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### Tabdeal

- **LLM Researcher** Sep 2024 – Present  
*Topic:* I am working on robustness and safety matters for the company's chatbot, using model fine-tuning.
- **Computer Vision Researcher** Oct 2024 – Present  
*Topic:* I am developing vision models for the company's authentication system."

## SELECTED ADVANCED COURSES

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- **Undergraduate Courses:** Mathematical Methods in Engineering (Linear Algebra) - 19.8/20, Introduction to Machine Learning - 19.5/20, Signals and Systems - 19.2/20, Convex Optimization 17/20, Game Theory 17.8/20.
- **Graduate Courses:** Deep Learning - 17.2/20, Reinforcement Learning 20/20, CS239<sup>†</sup>, CS231<sup>†</sup>, Stochastic Process <sup>†</sup>, Convex Optimization II (Currently Enroled), Optimal Control (Currently Enroled), High Dimensional Probability (Currently Enroled), Numerical Methods in Optimization (Currently Enroled), Online Learning (Currently Auditing).  
<sup>†</sup> Audited or **Currently Auditing**

## SELECTED ADVANCED COURSE PROJECTS

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- Poster presentation on "Robust Reinforcement Learning" and other reinforcement learning projects. [[code and report](#)]
- Implementation of GANBERT model for text classification task. [[code and report](#)]
- Estimation Maximization for Mixture of Gaussians [[code and report](#)]
- Multiple Deep Learning projects [[code](#)]
- Adaptive Filter for Noise Cancellation and other signal processing projects [[code and report](#)]

## TEACHING EXPERIENCES

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**Teaching Assistant**, Sharif University of Technology (For more information, please visit [my teaching page](#))

- **Undergraduate Courses:**
  - Engineering Mathematics (Spring 2023)
  - Probability and Statistics (Spring 2023 & Spring 2024)
  - Signals and Systems (Fall 2023 & Spring 2024)
  - Machine Learning (Fall 2023 & Spring 2024 & Fall 2024 **Head Assistant**)
  - Mathematical Methods in Engineering (Linear Algebra) (Fall 2023 & Spring 2024)
  - Optimization (Fall 2024)
- **Graduate Courses:**
  - Deep Learning (Fall 2024)

## VOLUNTEER EXPERIENCE

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- **Scientific Associate Principal**, Student Association at Sharif University ([Resana](#)) June 2023 – July 2024  
Resana is the scientific community at the Electrical Engineering department at Sharif University of Technology.
- **Head**, Head of First AIVengers Summer School June 2023 – Sep 2023  
AIVengers is a student event in the field of artificial intelligence and machine learning. Last year, we had teachers from Stanford and Sharif University of Technology, etc., who are Ph.D. students.

- **Central Council Member, [ReACT 2024](#)** Dec. 2024  
ReACT 2024 was one of the most significant conferences in Iran in 2024, with 1500 participants and 33 prominent speakers. We invited cutting-edge researchers from around the world to share their knowledge with the community.
- **Workshop Organizer, [SNS 2024](#)** March 2024  
SNS 2024 (The 6th Sharif Neuroscience Symposium) was a two-day event with 10 workshops and 9 keynote speakers from around the world including Sharif University of Technology, Microsoft, and MIT.

## SKILLS

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- **Programming:** Python (PyTorch, OpenCV, LangChain, Django, etc.), MATLAB, C++, Java, MySQL
- **Document Creation:**  $\LaTeX$ , Microsoft Office
- **Languages:** Persian, English, Turkish, Russian & Ukrainian (Elementary)

## HONORS AND AWARDS

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### Sharif University of Technology

- **Ranked 51st** in the Mathematics and Physics University Entrance Exam among 165,000 participants 2021
- **Ranked in the top 20 %** among 200 students in the EE department (**2nd** among Control students) 2024

## INTERESTS

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- **Hobbies:** Traveling, Hiking, Poetry, Novels, Music, Chess, Movies, Football, Philosophy
- **Languages:** Persian, Turkish, Ukrainian