

AMIRREZA VELAE

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RESEARCH INTERESTS

- Stochastic Process
- Machine Learning
- Optimization
- Graphs
- Information Theory
- Reinforcement Learning
- Game Theory
- Signal Processing
- Privacy
- Neuroscience

EDUCATION

Sharif University of Technology

Tehran, Iran

- Bachelor of Science, **Electrical Engineering**
GPA: 17.44/20
- Minor in **Mathematics**

Sep. 2021 – Present

Jan. 2023 – Present

Allameh Jafaru High School (NODET)

Marand, Iran

- Higher Secondary Education, **Math and Physics**

2018 – 2021

RESEARCH EXPERIENCES

University of Amsterdam

- **Policy Planning in Large Language Models**
Supervisor: Prof. [Mohammad Aliannejadi](#)

July 2024 – Present

- 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.

University of Amsterdam

- **Backpack Model**
Supervisor: Prof. [Mohammad Aliannejadi](#)

Aug 2024 – Present

- In this project, we are working on a backpack large language model. We aim to make sense of the model's senses and make it more interpretable and useful.

Max Planck Institute for Intelligent Systems

- **Learning-to-Defer Machine Learning and Bayesian Machine Learning**
Supervisor: [Amin Charusaie](#) & Prof. [Samira Samadi](#)

April 2024 – Present

- In this project, I am working on a L2D. We aim to utilize human feedback to enhance the performance of machine learning models. We are trying to test L2D performance on bayesian layers.

Sharif University of Technology

- **Novel View with a Light Field Camera**
Supervisor: Prof. [Arash Amini](#)

Sep 2023 – July 2024

- The Lytro camera is a light-field camera that provides a point cloud for a picture. In this project, I used cutting-edge vision algorithms, models, and various libraries to build a novel view from a scene using 2 or 3 pictures.

INTERNSHIP EXPERIENCES

HOMA (Cloud 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.
Supervisor: Prof. Matin Hashemi
Topic: Researched on open AutoML libraries to run them on multi node multi GPU environment.

Tabdeal

- **LLM Researcher** May 2024 – Present
Tabdeal is a cryptocurrency exchange that provides a platform for more than 1 million users to trade digital currencies.
Topic: I am working on RAGs.

SELECTED ADVANCED COURSES

- **Undergraduate Courses**: Mathematical Methods in Engineering (Linear Algebra) - [19.8/20](#), Introduction to Machine Learning - [19.5/20](#), Signals and Systems - [19.2/20](#), Optimization [17/20](#), Game Theory [17.8/20](#).
- **Graduate Courses**: Deep Learning - [17.2/20](#), Reinforcement Learning (This semester), CS239[†], CS231[†], Stochastic Process [†], Percolation on graphs[†].
[†] Audited or Currently Auditing

SELECTED ADVANCED COURSE PROJECTS

- Poster presentation on the topic of "Robust Reinforcement Learning" and multiple projects in the field of reinforcement learning. [\[code and report\]](#)
- 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 [\[code and report\]](#)
- Implementation of a simple simulation of Twitter using Java, JavaFX, and MySQL [\[code\]](#)
- Design and simulation of piezoelectric transducer test circuit [\[implementation and report\]](#)

TEACHING EXPERIENCES

Teaching Assistant, Sharif University of Technology, Tehran, Iran.

- **Undergraduate Courses**:
 - Engineering Mathematics (Spring 2023)
 - Probability and Statistics (Spring 2023 & Spring 2024)
 - Signals and Systems (Fall 2023 & Spring 2024)
 - Introduction to Machine Learning (Fall 2023 & Spring 2024)
 - Mathematical Methods in Engineering (Linear Algebra) (Fall 2023 & Spring 2024)
 - Basic Programming (C++) (Spring 2022)

VOLUNTEER EXPERIENCE

- **Scientific Associate Principal**, Central Council of Electrical Engineering Student Association at Sharif University of Technology ([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.
- **HR**, [ReACT 2023](#) Dec. 2023

SKILLS

- **Programming**: Python (OpenCV, NumPy, Pandas, Scikit-learn, PyTorch, etc.), MATLAB, C++, Java, MySQL
- **Document Creation**: \LaTeX , Microsoft Office
- **Languages**: Persian, English, Turkish, Russian (Elementary)

HONORS AND AWARDS

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 (**1st** among Control students) 2024

INTERESTS

- **Hobbies**: Traveling, Hiking, Poetry, Novels, Music, Chess, Movies [Letterboxd](#)
- **Sports**: Football
- **Languages**: Russian, Turkish