

# AMIRREZA VELAE

amirrezavelae@ee.sharif.edu ◇ Webpage ◇ Github ◇ Linkedin ◇ Twitter

## RESEARCH INTERESTS

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- Random Process
- Machine Learning
- Optimization
- Signal Processing
- Game Theorey
- Reinforcement Learning
- Image Processing
- information Theorey

## EDUCATION

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### Sharif University of Technology

Tehran, Iran

- Bachelor of Science, Electrical Engineering  
GPA: 3.66/4.0

Sep. 2021 – Present

### Allameh Jafaru High School (NODET)

Marand, Iran

- Higher Secondary Education, Math and Physics

2018 – 2021

## RESEARCH EXPERIENCES

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### Sharif University of Technology

- SDE in Diffusion Models Feb. 2024 – Present  
*Supervisor:* Prof. Mohammad Hossein Rohban
  - Studying the application of SDE in diffusion.
  - Studying Stochastic Differential Equations and their solve methods and transformation to PDE.
- Novel View with a Light Field Camera Sep 2023 – Present  
*Supervisor:* Prof. Arash Amini
  - Using deep learning to improve the quality of the synthesized novel view with depth map.
  - Currently desinging a disentangled VAE to synthesize novel view with a depth map that Lytro camera provides.

## INTERNSHIP TRAINING

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### HOMA (Coud AI)

- Open AutoML June 2023 – Sep 2023  
*Supervisor:* Prof. Matin Hashemi  
*Topic:* Researched on open AutoML libraries and compared them with each other to run them on multi node multi GPU environment.

## SELECTED ADVANCED COURSES

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- Undergraduate Courses: Introduction to machine learning(19.5/20), Signal and System (19.2/20), Optimization (This semester), Game theorey (This semester).
- Graduate Courses: Deepleaning(17.2/20), CS239<sup>†</sup>, CS231<sup>†</sup>, Random Prcess <sup>†</sup>, Advanced Topics in Probability(Random Walks)(This semester)<sup>†</sup>, Reinforcement Learning(This semester).

<sup>†</sup> Audited or Currently Auditing

## SELECTED ADVANCED COURSE PROJECTS

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- Estimation Maximization for Mixture of Gaussians [[code and report](#)]
- Multiple deep learning projects [[code](#)]
- Implementation of GANBERT model for text classification task. [[code and report](#)]

## TEACHING EXPERIENCES

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

- Undergraduate Courses:
- Engineering Mathematics (Spring 2023)
- Probability and Statistics (Spring 2023 & Spring 2024)
- Signal and System (Fall 2023 & Spring 2024)
- Introduction to Machine Learning (Fall 2023 & Spring 2024)
- Mathematical Methods in Engineering (Linear Algebra) (Fall 2023 & Spring 2024)

## VOLUNTEER EXPERIENCE

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- Scientific associate principal, Central Council of Electrical Engineering Student Association at Sharif University of Technology (Resana) June 2023 – Present  
Resana is the scientific community at the Electrical Engineering department at Sharif University of Technology.
- Central Council Member, ReACT 2024 Dec. 2024  
ReACT 2023 was one of the most significant conferences in 2023 in Iran, having 1500 participants and 33 prominent speakers.
- 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, with teachers from Stanford and Sharif University of Technology whom are PHD students.
- HR, ReACT 2023 Dec. 2023

## SKILLS

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

## INTERESTS

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- Hobbies: Photography, Traveling, Hiking, Reading
- Sports: Football, Volleyball, Table Tennis