




# Amirhossein Mahmoudi

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## EDUCATION

**Sharif University of Technology**  
*Bachelor of Science in Computer Science*

Sep. 2019 - Present  
Current GPA: 3.5/4.0

### Selected Courses:

- Machine Learning (*Classical Models, Deep Neural Networks, Convolutional Neural Networks, Sequence Processing Models*)
- Statistical Learning (*Classical Machine Learning, Mathematical Foundations of Machine Learning*)
- Introduction to Bioinformatics (*Gene Expression, De Novo Assembly, Phylogenetic trees, Epigenetics, Markov Models*)
- Big Data Engineering (*MapReduce, Spark, Hadoop, Kafka, Cassandra, Docker*)
- Numerical Analysis 2 (*Linear and Nonlinear Systems, Iterative Techniques, Initial-Value and Boundary-Value Problems*)
- Advanced Programming (*Object Orientation, Generic, Graphic, Concurrency, Reflection, Network*)
- Probability and Its Applications
- Data Structures
- Design Algorithms
- Linear Algebra

## RESEARCH INTEREST

- Machine Learning
- Computational Biology
- Data Science
- Natural Language Processing

## RESEARCH EXPERIENCE AND PROJECTS

### Transcriptome-Based Fluxomics Reconstruction with a Novel Deep Learning Approach

Currently in progress as bachelor project

Supervisor: Dr. Mojtaba Tefagh

- Applying implicit deep learning and convex optimization layers to infer metabolic fluxes from gene expression data

### Chaka: A High-performance, Cost-efficient, Semi-conventional Regional Jet Family

2<sup>nd</sup> place in the 2021 AIAA graduate team aircraft design competition

Supervisor: Dr. Mohammad H Sadraey

- Designing a modern regional jet family with a 20% reduction in fuel consumption compared to existing rivals

### MIS-PADX: Manned Intelligent Scientific Phobos and Deimos Exploration

Participation in the 2022 AIAA undergraduate team space design competition

Supervisor: Dr. Maryam Kiani

- Developed a conceptual design for a Martian Moon Exploration Excursion Vehicle to collect lunar samples

### WE ([Github](#))

The final project for advanced programming course

Supervisor: Mojtaba Ostovari

- Developed a Java-based social app with JavaFX and Hibernate ORM, featuring messaging and posting

### Breast Cancer Prediction ([Github](#))

Homework for Machine Learning Course

Supervisor: Dr. Ali Sharifi Zarchi

- Applying machine learning models to estimate survival outcomes of breast cancer patients

## TEACHING EXPERIENCE

**Machine Learning** | *Teaching Assistant*  
*Lecturing and designing homework* ([Github](#))

Jan. 2023 - Aug. 2023  
Supervisor: Dr. Mahdi Sharifzadeh

**Advanced Programming with Java** | *Teaching Assistant*  
*Designing course project* ([Github](#))

Jan. 2023 - Aug. 2023  
Supervisor: Dr. Hossein Boomari

**Basics for Programming with C** | *Teaching Assistant*  
*Designing course homework*

Jan. 2021 - Aug. 2021  
Supervisor: Dr. Marjan Nikbin

## WORK EXPERIENCE

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<b>Gamein</b>   <i>Graphic Design Manager</i> Biggest student event in Iran around supply chain simulation	May 2022 - Apr. 2023
<b>Winter Seminar Series</b>   <i>Graphic Designer</i> Annual events including seminars about advanced topics of computer science with the presence of prominent professors	Feb. 2023 - Mar. 2023
<b>Sharif Visual Arts Club</b>   <i>Advertising Manager, Website Manager</i> Cool university club centered around visual arts	Oct. 2020 - Present
<b>Sharif Poetry and Literature Club</b>   <i>Member</i> University club to share and develop Persian poetry skills	Sep. 2019 - Present
<b>Hamband Scientific Society</b>   <i>Graphic Designer</i> Scientific Society of Math Department at Sharif University of Technology	Aug. 2022 - Present
<b>Owj Magazine</b>   <i>Graphic Designer</i> Scientific magazine of Student Society of Aerospace Engineering Department at Sharif University of Technology	Jan. 2019 - Jan. 2022

## SKILLS

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**Programming Languages:** C, Java, JavaScript, Python, R, Scala, HTML/CSS,  
**Tools:** Git/GitHub, Docker, Unix Shell, SQL, Spark, MongoDB  
**Frameworks:** React, Django, Nextjs, WordPress, Spring, Hibernate ORM  
**Libraries:** TensorFlow, PyTorch, Scikit-Learn, Keras, Pandas  
**Soft Skills:** Scrum, Agile Project Management, Team Leadership, Project Planning, Presentation

## PUBLICATIONS

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- Mohammad H. Sadraey, **Amirhossein Mahmoudi**, et al., “Chaka: A high-performance, cost-efficient, semi-conventional regional jet family”, American Institute of Aeronautics and Astronautics (AIAA), Reston, Virginia, USA, 15th September 2021. ([DOI: 10.13140/RG.2.2.20347.64802](https://doi.org/10.13140/RG.2.2.20347.64802))

## HONORS AND AWARDS

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<b>2<sup>nd</sup> Place in The 2021 AIAA Graduate Team Aircraft Design Competition</b> Among teams from top-ranked universities • <a href="#">Announcement</a> , <a href="#">Winning Proposals</a> , <a href="#">Certificates</a>	2020 - 2021 Organized by the American Institute of Aeronautics and Astronautics
<b>Participation in The 2022 AIAA Undergraduate Team Space Design Competition</b> Competing with elite teams from top-ranked universities • <a href="#">Certificates</a>	2021 - 2022 Organized by the American Institute of Aeronautics and Astronautics

## LANGUAGES

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**Persian:** Native/Bilingual  
**Kurmanji (Northern Kurdish):** Native/Bilingual  
**English:** Professional working proficiency

## HOBBIES AND INTERESTS

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- Writing poem in Persian
- Drawing portrait
- Generate images and videos with AI
- Coordinating English free discussion sessions at the local language institute
- Amatur volleyball player (Member of the volleyball team in the Math Department)