



Fatemeh Nikpanjeh

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Physics M.Sc. Student | Data Analyst

fnikp

Fatemeh Nikpanjeh

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WHO AM I?

I am currently in the last semester of my master's degree in physics, with a focus on complex systems, and a strong passion for data science and machine learning. Throughout my academic journey, I have taken a proactive approach in expanding my knowledge and skills in these areas by completing online courses and projects that have helped me develop a solid understanding of the fundamental concepts. My background in complex systems, closely related to data science, provides me with a unique perspective that I am eager to bring to the table. Additionally, I am a team player and have strong communication and interpersonal skills which I believe will be valuable assets in any professional setting.

EDUCATION

2021 – Present



Master of Science in Physics

Sharif University of Technology

Research Area: Complex Systems

GPA: 18.27 / 20.00

Tehran, Iran

2016 – 2021



Bachelor of Science in Physics

Shahid Beheshti University

Ranked 7th in National Scientific Physics Olympiad for University Students

Ranked among the top 15% of the graduating class

Tehran, Iran

ACADEMIC PROJECTS

• If you want to check out some of my sample codes and learning mini-projects, feel free to visit my [GitHub page](#).

Mar. 2022 – Present

Dynamical Analysis and Control of Tipping Cascades in Complex Systems

M.Sc.

Supervisor: Prof. M. Reza Rahimi Tabar

- Analysis of the effects of interaction strength and network topology on the size of tipping cascades.
- Study of the controllability of tipping cascades in various networks, considering parameters such as control time horizon and cost of control.
- Examination of the impact of higher-order interactions on tipping cascades and their control.
- Development of a data-driven approach to identify early warning signals for tipping cascades.

Relevant Skills:

Time-series Analysis

Clustering

Numerical Simulation

Dynamical Systems

Control Theory

Sep. 2019 – Feb. 2020

Footprint of Network Modularity in The Spectrum of Eigenvalues of Adjacency Matrix

B.Sc.

Supervisor: Prof. Seyed Ali Hosseiny

- Investigated the relationship between network modularity and the spectrum of eigenvalues of the adjacency matrix in large random networks.

Relevant Skills:

Linear Algebra

Data Analysis

Visualization

Random Matrix Theory

LANGUAGES



Persian

Mother tongue



English

C1 Proficient User



Turkish

B1 Independent User



German

A2 Basic User

EXPERIENCES

Teaching Assistant

Academic

- Fundamental Physics II
- Thermodynamics and Statistical Physics I

Spring 2021

Chair and Member of The Board of The Scientific Association of Physics SBU

Volunteer

2016-2019

TEST SCORES

Physics GRE

Sep. 2021

Total score: 840 (70%)

• **Classical Mechanics:** 86 (76%)

• **Electromagnetism:** 85 (74%)

• **Quantum Mechanics:** 84 (73%)

COURSES | CERTIFICATES



Advanced Learning Algorithms | by Andrew NG (Certificate )



Supervised Machine Learning: Regression and Classification | by Andrew NG (Certificate )



SQL for Data Science | by UC Davis (Certificate )



Machine Learning | by Ali Hejazi (Pytopia )



Python Programming(Beginner to Advanced) | by Ali Hejazi (Pytopia )



Stochastic Processes | by Prof. M. Reza Rahimi Tabar (Sharif University of Technology)

SKILLS

✓ Programming languages

Python	<div><div></div><div></div><div></div><div></div><div></div></div>
SQLite	<div><div></div><div></div><div></div><div></div><div></div></div>
C++	<div><div></div><div></div><div></div><div></div><div></div></div>

✓ Data Processing

Numpy	<div><div></div><div></div><div></div><div></div><div></div></div>
Pandas	<div><div></div><div></div><div></div><div></div><div></div></div>

✓ Data Visualization

Matplotlib	<div><div></div><div></div><div></div><div></div><div></div></div>
Seaborn	<div><div></div><div></div><div></div><div></div><div></div></div>

✓ Machine Learning

Scikit-Learn	<div><div></div><div></div><div></div><div></div><div></div></div>
Tensor Flow	<div><div></div><div></div><div></div><div></div><div></div></div>

✓ Additional Libabries

Scipy	<div><div></div><div></div><div></div><div></div><div></div></div>
Sympy	<div><div></div><div></div><div></div><div></div><div></div></div>
NetworkX	<div><div></div><div></div><div></div><div></div><div></div></div>

✓ Development Tools

Git	<div><div></div><div></div><div></div><div></div><div></div></div>
Jupyter Notebook	<div><div></div><div></div><div></div><div></div><div></div></div>

✓ Markup Languages

LaTeX	<div><div></div><div></div><div></div><div></div><div></div></div>
Markdown	<div><div></div><div></div><div></div><div></div><div></div></div>

✓ Miscellaneous

Microsoft Office	<div><div></div><div></div><div></div><div></div><div></div></div>
Adobe Photoshop Suite	<div><div></div><div></div><div></div><div></div><div></div></div>

REFERENCES

Prof. M. Reza Rahimi Tabar



Sharif University of Technology



M.Sc. Supervisor



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Prof. Seyed Ali Hosseiny



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