# Fatemeh Nikpanjeh

Physics M.Sc. Student | Data Analyst


fnikp
Fatemeh Nikpanjeh
+98 919 776 1167
f.nikp77@gmail.com


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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** — *Tehran, Iran*

***Shrif Univeristy of Technology***

Research Area: Complex Systems
GPA: 18.27 / 20.00

2016 – 2021

**Bachelor of Science in Physics** — *Tehran, Iran*

***Shahid Beheshti University***

Ranked 7th in National Scientific Physics Olympiad for University Students
Ranked among the top 15% of the graduating class

## 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 controlability 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 — Spring 2021
- Thermodynamics and Statistical Physics I — Fall 2020

**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** ●●●●○
- **SQLite** ●●○○○
- **C++** ●●○○○

### Additional Libabries

- **Scipy** ●●○○○
- **Sympy** ●●●○○
- **NetworkX** ●●●○○

### Data Processing

- **Numpy** ●●●●○
- **Pandas** ●●●●○

### Development Tools

- **Git** ●●●○○
- **Jupyter Notebook** ●●●○○

### Data Visualization

- **Matplotlib** ●●●●○
- **Seaborn** ●●●●○

### Markup Languages

- **LaTex** ●●●○○
- **Markdown** ●●○○○

### Machine Learning

- **Scikit-Learn** ●●○○○
- **Tensor Flow** ●●○○○

### Miscellaneous

- **Microsoft Office** ●●●●○
- **Adobe Photoshop Suite** ●●●○○

## REFERENCES


**Prof. M. Reza Rahimi Tabar**

Sharif University of Technology
M.Sc. Supervisor
Personal Webpage
@ rahimitabar [at] sharif.edu
rahimitabar [at] gmail.com

**Prof. Seyed Ali Hosseiny**

Shahid Beheshti University
B.Sc. Supervisor
Personal Webpage
@ al_hosseiny [at] sbu.ac.ir
alihd22 [at] gmail.com