

Saleh Shamloo Ahmadi

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EDUCATION

Sharif University of Technology, Tehran, Iran

Bachelor of Physics

Fall 2019 – Present (Expected February 2024)

GPA: 18.75/20.00 (Ranked 5th out of 55 in class)

GRE Subject Physics: 980/990 (96th Percentile)

RESEARCH INTERESTS

Simulation of Materials, Quantum Technology, Condensed Matter Physics, Computational Physics.

RESEARCH EXPERIENCE

Monte Carlo Simulation of Polygonal Colloids in Various Geometries

Summer 2022 – Present

Supervisor: Prof. Mohammad Reza Ejtehadi

Sharif University of Technology

- Developed a new Julia package to allow for arbitrary geometries (HOOMD-blue, which is the package used for this kind of simulation, has limited ability for adding constraints).
- Introduced novel optimizations.
- Utilizing CUDA GPU acceleration.

Exfoliation of Layered Materials into Nanosheets

Summer 2022 – Fall 2022

Supervisor: Dr. Naimeh Naseri

Sharif University of Technology

- Worked in the lab to gather testing data for the evaluation of a machine learning model.
- Created the samples using bath sonication.
- Analyzed samples with UV-Vis tests.

Lab Assistant in the Health and Energy Lab

Winter 2022 – Fall 2022

Supervisors: Dr. Naimeh Naseri, Mr. Nikan Afsahi

Sharif University of Technology

- Trained under the supervision of a master's student.
- Helped with micro-supercapacitor projects.

ACHIEVEMENTS

Ranked **8th** in the Iranian Universities Physics Olympiad

Summer 2022

Ranked in the **top 0.2% (284th out of 150666)** in the mathematics and physics Konkour (Iranian universities entrance exam) and **1st (out of 139131)** in the foreign language Konkour

Summer 2019

Awarded the **bronze medal** in the Iranian Physics Olympiad

Summer 2018

PROJECTS

Ising Model, Argon MD, and Percolation Simulation | [GitHub repository](#)

Fall 2021

- Supervisor: Prof. Mohammad Reza Ejtehadi. Computer Simulations in Physics course assignment projects (with 20.0/20.0 final grade).
- Other notable simulation include various deposition models, diffusion-limited aggregation and different random walks.

Simulating Electrodynamical Systems using the FDTD Method | [GitHub repository](#)

Spring 2021

- Supervisor: Prof. Mahmud Bahmanabadi. Electromagnetism II course project

Nonlinear Market Model Study Reproduction [GitHub Repository](#)

Spring 2023

- Supervisor: Dr. Saman Moghimi Araghi. Nonlinear Dynamics and Chaos course project.
- Joint work with Erfan Rahbari.
- Reproduced the result of [this paper](#) which discusses nonlinear asset-price dynamics and stabilization policies.

Astronomical Image Processing | [GitHub repository](#)

Summer 2023

- Supervisor: Dr. Reza Rezaei. Astronomy Lab course assignment projects.
- Performed 9 amateur astronomy experiments in teams of 3, involving observations and intensive image processing.

Measurement of Short Particle Lifetimes | [Documents](#)

Spring 2022

- Supervisor: Dr. Amin Faraji Astaneh. Particle Physics course project.
- Joint work with Hossein Hatamnia.
- Used CERN tutorial data to demonstrate one of the methods.

Sound Amplifier Circuit Design | [Documents](#)

Fall 2020

- Supervisor: Dr. Seyed-Nader Seyed-Reihani. Electronics I course project

Trajectory of Supersonic Projectile with Variable Air Resistance | [GitHub repository](#)

Fall 2020

- Supervisor: Prof. Sohrab Rahvar. Analytical Mechanics I course project.

Simulating Wheel-Pendulum System with Lagrangian Mechanics | [GitHub repository](#)

Winter 2021

- Supervisor: Prof. Sohrab Rahvar. Analytical Mechanics II course project.

COURSES

Quantum Computation and Information I | [Webpage](#)

Spring 2023

Prof. Vahid Karimipour

Grade: 17.6/20.0

Data Science and HPC | [Webpage](#) | [Assignments](#) [GitHub repository](#)

Spring 2022

Dr. Hamidreza Arian

Grade: 20.0/20.0

Advanced Programming | [Course project](#) [GitHub](#) | [Assignments](#) [GitHub](#)

Spring 2021

Dr. Mohammad Amin Fazli

Grade: 20.0/20.0

TEACHING EXPERIENCE

Teaching Assistant, Computer Simulations in Physics

Spring 2023

Prof. Mohammad Reza Ejtehad

Sharif University of Technology

Teaching Assistant, Introductory Programming (in C)

Spring 2021

Dr. Reza Fakouri

Sharif University of Technology

TECHNICAL SKILLS

Programming Languages	Julia, Python, C/C++, Java, Octave/MATLAB, Mathematica
Tools & Frameworks	CUDA, Machine Learning, L ^A T _E X, git, Parallel Computation, Blender, Inkscape, Microsoft/Libre Office
Machine Learning	scikit-learn, TensorFlow, Flux.jl, Keras

LANGUAGE

English Fluent (C1~C2 CEFR Level)

TOEFL Score: 111/120 (Reading: 30/30, Listening: 29/30, Speaking: 22/30, Writing: 30/30)

Persian Native

COMMUNITY & LEADERSHIP

Head of Translation | [Webpage](#)

August 2021 – September 2022

Zharfa Scientific Community

Sharif University of Technology

- Translated parts of The Feynman Lectures on Physics (license for free electronic publication secured from The eFLP Group)

Member of the Board of Directors | [Website](#)

September 2021 – September 2022

Zharfa Scientific Community

Sharif University of Technology

Member of the Lambda Study Circle | [Webpage](#)

February 2020 – Present

Quanta Study Circles

Sharif University of Technology