Saleh Shamloo Ahmadi

(+98)9120153915 | slhshamloo@gmail.com | github.com/slhshamloo | slhshamloo.github.io

EDUCATION

Sharif University of Technology, Tehran, Iran	Fall 2019 – Present (Expected February 2024)
Bachelor of Physics	*GPA: 18.75/20.00 (Ranked 5th out of 55 in class)*

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*
- Writing custom code to allow for arbitrary geometries (HOOMD-blue, which is the package used for this kind of simulation, has limited ability for adding constraints).
- Utilizing CUDA GPU acceleration.

**Machine Learning Prediction Model for the
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.
- Created the samples using bath sonication and analyzing the sample with a UV-Vis test.

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 assigment projects.
- Other notable simulation include various deposition models, diffusion-limited aggregation and different random walks.

Simulating Electrodynamic 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 amature 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*
- Graduate course. Aimed to be a comprehensive introduction to the theory behind quantum computing and quantum information technology.
- Presented a literature review of quantum simulation at the end of the course.

Data Science and HPC | [Webpage]   Spring 2022
Dr. Hamidreza Arian   *Grade: 20.0/20.0*
- Offered by the Graduate School of Management and Economics.
- The syllabus included supervised learning, clustering methods, and parallel computing. [GitHub repository]

Advanced Programming   Spring 2021
Dr. Mohammad Amin Fazli   *Grade: 20.0/20.0*
- Programming Language: Java
- The course project was developing a Yu-Gi-Oh game in teams of 3. [Course project GitHub repository]
- The syllabus included object oriented programming, graphical user interface (with JavaFX), client-server and peer-to-peer (P2P) networks, version control with Git, and regex. [Assignments GitHub repository]

Teaching Experience

Teaching Assistant, Computer Simulations in Physics   Spring 2023
Prof. Mohammad Reza Ejtehadi   *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, LaTeX, 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*