

EDUCATION

Sharif University of Technology, Tehran, Iran

Bachelor of Science, Physics

– CGPA: 17.46/20

Sep 2018 - May 2023 (Expected)

Farzanegan 1 High School, Tehran, Iran

Diploma

– CGPA: 19.46/20

Sep 2014 - May 2018

RESEARCH INTERESTS

- Superconducting Circuits
- Circuit Quantum electrodynamics
- Quantum Computation and Information
- Complex Systems
- Computational Physics

INTERNSHIP

Preparing arbitrary fock states in a cavity, using GRAPE algorithm

Supervisor : *Prof. Benjamin Huard and Dr. Audrey Bienfait*
(Quantum Circuit Group, ENS Lyon, France)

Jul - Oct 2022

- Using the GRAPE algorithm to find the control pulses in a cavity-qubit coupled system to reach an arbitrary fock state and finding the right translation between simulation values and amplitudes in the experiment. [Further descriptions](#)

RESEARCH PROJECTS

Grup d'Informació Quàntica, Universitat Autònoma de Barcelona, Spain

Supervisor: *Prof. Andreas Winter*

Apr 2022 - Now

- **Observational Entropy and Correlations:** Finding properties of the Observational Entropy under different measurements.

Quantum Information Science Group, Sharif University, Iran

Supervisor: *Prof. Vahid Karimipour*

Feb - Jun 2022

- **Generalized Landau-Streeter channel in the high-dimensions:** Computing quantum information properties of the generalized form of the Landau-Streeter Channel in the higher dimensions.

Sharif University, Iran

Supervisor: *Dr. Saman Moghimi Araghi*

Jul 2021 - Now

- **Abelian Sandpile Model:** Examining Self-organized Criticality in the 2d-grid for Abelian Sandpile Model by focusing on longer links' existence.

Sharif University, Iran

Supervisor: *Dr. Fakhteh Ghanbarnejad and Dr. Farnoush Farahpour*

Apr 2020 - Apr 2021

- **The way observation reflects the reality of SIR, SEIR, SIRD dynamics:** Estimating the real epidemic dynamics with a random sampling at a macroscopic level.

COURSE PROJECTS

Information theory: The Capacity of Classical-Quantum Channels

Supervisor: *Prof. Mohammad R. Aref -Report file*

Fall 2021

Quantum Mechanics: Discrete Element Method Simulation for Different Potentials

Supervisor: *Dr. Abolhassan Vaezi*

Spring 2021

Computational physics: Ising Model and Phase Transitions Simulation

Supervisor: *Dr. Fakhteh Ghanbarnejad*

Fall 2020

WORKSHOPS

Topology and non-equilibrium dynamics in engineered quantum systems*Max Planck Institute for the Physics of Complex Systems*

Oct 2022

Quantum Transport with Ultracold Atoms*Max Planck Institute for the Physics of Complex Systems*

Aug - Sep 2022

AWARDS &
ACHIEVEMENTS**Silver medal**, in Iran's national Olympiad of Astronomy and Astrophysics, 2017Member of **Iran's National Elites Foundation**SELECTED
COURSES• **Quantum Theory courses:**

– Advanced Quantum Mechanics (M.Sc, 18.5/20), Quantum Computing (Ph.D., 16/20)

• **Information Theory courses:**

– Information Theory (M.Sc, 16/20), Quantum Information Theory (Audit)

• **Complex Systems courses:**

– Complex Systems (M.Sc, 19.5/20), Stochastic Process (M.Sc, 18.9/20), Computational Physics (M.Sc, 18.9/20), Game Theory (M.Sc, 20/20)

[Further descriptions](#)TEACHING
EXPERIENCES**Teacher Assistant: Stochastic Processes in Bioinformatics (M.Sc)***Dr. Mohammad Hossein Rohban*

Spring 2022

Teacher Assistant: Game Theory (M.Sc)*Dr. Mohammad Hossein Rahmati*

Spring 2022

Teacher Assistant: Statistical Modeling (M.Sc)*Dr. Fakhteh Ghanbarnejad*

Spring 2021

Olympiad InstructorProviding courses to prepare high school students for the National Astronomy Olympiad. *Fall 2017 - Now*

- Topics: Classical Mechanics, Astrophysics, Cosmology, Spherical Astronomy, Data analysis
- Institutions: [Farzanegan 1](#), [Farzanegan 2](#), [Salam](#), Summer school of National Astronomy and Astrophysics Olympiad (Observational Astronomy test writer)

SKILLS

Programming Languages: [QUA](#), Python (QuTip, SciPy, NetworkX, Pandas, Matplotlib, Seaborn, Numpy), Matlab**Tools:** cQED (Qubit measurement), [Quantum Orchestration Platform \(QOP\)](#), \LaTeX , Mathematica, Office, Adobe Photoshop

LANGUAGES

Persian: Native, **English:** Advanced

REFERENCES

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