

SAHAR DORDAEI JOGHAN

M.Sc. Applicant in Physics and Astronomy, A.Y. 2026/27

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EDUCATION

Bachelor of Science, Physics

Jan 2019 – Feb 2023

Shahid Rajaei Teacher Training University, Tehran, Iran

- Final two years GPA: 19.10/20 (4/4)
- Overall GPA: 17.40/20 (3.61/4)
- **Relevant Coursework:** Stellar Structure & Evolution (20/20), Astronomy & Astrophysics (19.5/20), Cosmology (18.5/20), Numerical Computations (19.75/20), Quantum Mechanics (19.5/20), Electromagnetism (17.5/20), Thermodynamics & Statistical Physics (17.5/20), Optics (17.5/20), Spectroscopy (19.5/20), Laser Physics (18.5/20), Mathematical Physics (17.5/20), Analytical Mechanics (16.5/20), Physics Project (20/20)
- **Teacher Preparation Program Coursework:** 30 mandatory credits including 6 Specialized Training Workshops in Teaching Physics, Principles and Methods of Teaching and Learning, Teaching Internship I & II; not listed on transcript but official documentation is available upon request from the university
- Completed several course presentations and literature reviews on physics and astrophysics topics

RESEARCH INTERESTS

- Cosmology (early Universe, inflation, CMB, large-scale structure, dark matter/energy)
- Formation and evolution of galaxies, stars, and compact objects
- Combining theoretical, computational, and observational approaches

RESEARCH EXPERIENCE AND PROJECTS

Planck CMB Temperature Visualizer

GitHub

- A Python tool to visualize the temperature anisotropies in the Cosmic Microwave Background using the Planck 2018 SMICA map
- Loads temperature data, converts it to microkelvin, and generates a full-sky Mollweide projection

Celestial Projectile Simulation

GitHub

- Created a VPython simulation of projectile motion on different planetary bodies
- Included interactive controls for gravity, mass, velocity, and launch angle

Bachelor Physics Project Course, Shahid Rajaei Teacher Training University

Fall 2022

Supervisor: Prof. Fatemeh Ahmadi Kalateh

- Characterized lunar and mercurian craters (primary and secondary) using ImageJ
- Wrote a research-style term paper
- Sole undergraduate in the department to take and complete the course

AWARDS AND SCHOLARSHIPS

- **Merit-Based Admission Offer**, M.Sc. Physics (Exempted from national entrance exam with full tuition waiver)
- **National Scholarship (Full Tuition Waiver + Monthly Stipend)**, Ministry of Education, Iran (B.Sc. Physics, 2019–2023)
- **Graduating Class Academic Award (Top 10%)**, Shahid Rajaei Teacher Training University
- **Astronomy Association Honors**, Shahid Rajaei Teacher Training University

TEACHING EXPERIENCE

High School Physics Teacher (Full-Time), Tehran, Iran

Mar 2023 – present

- Courses: Physics (Grades 10 to 12), with class sizes of 30 to 35 students (24 hours/week)
- Designed and delivered lesson plans aligned with national curriculum standards
- Led and supervised laboratory sessions
- Assessed student performance through exams, assignments, and lab reports

Teaching Assistant, Shahid Rajaei Teacher Training University

Spring 2022 – Fall 2022

- Courses: Electromagnetism I & II (two semesters; ~40 students per term)
- Assisted with course preparation and administration
- Led problem-solving sessions (lectures, group activities, and one-on-one tutoring)
- Graded assignments/exams, and provided feedback

Physics Teaching Intern, Alzahra High School, Tehran, Iran

Oct 2021 – Jun 2022

- Courses: Physics (Grades 10 to 12)
- Part of formal mandatory teacher training curriculum during B.Sc. program
- Contributed to lesson planning and delivery
- Supervised labs, managed classrooms, and conducted small-group and individualized instruction

LEADERSHIP AND OUTREACH

Member, The Astronomical Society of Iran

Jan 2023 – present

President, Astronomy Association, Shahid Rajaei Teacher Training University

2021 – 2023

- Voluntary Position
- Organized events, on-campus Astronomy Coffee sessions, guest lectures, and eclipse viewing.
- Led editorial and design teams.

Founding Member, Astronomy Association, Shahid Rajaei Teacher Training University

2021

SKILLS

Python (scientific computing, data analysis, visualization), Git/GitHub, Ubuntu, COMSOL Multiphysics, \LaTeX , ImageJ, Origin, Grapher

CERTIFICATIONS

- **Data-Driven Astronomy**, U. Sydney
- **Data Science in Python**, U. Michigan
- **From the Big Bang to Dark Energy**, U. Tokyo
- **Communication Skills**, U. Pennsylvania
- **Celestial Observation**, Faradars
- **Leading Teams**, U. Michigan
- **Research Methods: Thesis Writing**, Faradars

LANGUAGES AND TESTS

Persian (Native)

English (C1/C2) — IELTS Academic 8.0 (*R 9.0, L 8.5, W 7.5, S 7.0; valid Oct 2024–Oct 2026*)

REFERENCES

All referees are with the Department of Physics, Shahid Rajaei Teacher Training University

Prof. Yousef Farzan-Nahad

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