

# Niloofar Sharei

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## RESEARCH INTERESTS

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**Observational Galaxy Formation and Evolution**, First galaxies, Star-forming clumps .

## EDUCATION

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**University of California, Riverside**

*PhD in physics and astronomy*

Sep 2022-Present

*Riverside, CA*

**Alzahra University**

*Master of Science in theoretical physics*

*Tehran, Iran*

**Sharif University of Technology**

*Bachelor of Science in Engineering*

*Tehran, Iran*

## SKILLS

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**Data Handling:** Python for data analysis, error analysis, astronomical image processing (aperture photometry, profile-fitting photometry), Bagpipes, plotting (NumPy, scipy, astropy, matplotlib, photutils), SAOImageDS9, TOPCAT

**Programming Languages:** Python, R, Matlab, Pascal,  $\text{\LaTeX}$

**Tools:** Wolfram Mathematica, Maple, Git/GitHub, VS Code, Autodesk Maya, AutoCAD, SOLIDWORK

**Languages:** English, German, Persian

## RESEARCH EXPERIENCE

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**Doctoral research** | *University of California, Riverside*

- Investigating the role of clumps in star formation rates of galaxies in Redshift between 0.5 and 3 using HST imaging
- Advisors: Dr. Alexander De La Vega, Prof. Brian Siana

**Master's research** | *Alzahra University*

- Stellar cluster photometry using archival HST data; CMD construction.
- Advisor: Dr. Ahmad Shariati

**Selected Projects** | *University of California, Riverside/Alzahra University*

- Designed and implemented an N-body simulation code as part of a computational astrophysics course
- Developed and implemented computational algorithms to model quantum wave behavior and interaction with barriers in quantum mechanics course
- Spearheaded a project in the advanced statistical mechanics course, focusing on Monte Carlo simulation techniques implemented in mathematica

## PUBLICATIONS

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- Niloofar Sharei**, A. De la Vega, Brian Siana et al. "Improving SED fitting assumptions in clumps at redshifts between 0.5-3", in preparation
- WV Jacobson-Galan, L Dessart, R Margutti, et al.(including **Niloofar Sharei**) "SN 2023ixf in Messier 101: Photo-ionization of Dense, Close-in Circumstellar Material in a Nearby Type II Supernova", The Astrophysical Journal letter, Volume 954, Number 2
- A. De La Vega et al. (including **Niloofar Sharei**), "The Fraction of Clumpy Galaxies in JWST Surveys over redshift 2-12," Submitted to The Astrophysical Journal.

## OBSERVING EXPERIENCE

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**Lick Observatory** | *Mount Hamilton, California, US*

May 2023/ May 2024

- Observational Astronomy Workshop
- Used Shane (3m) and Nickel (1m) telescopes for 8 nights

## TEACHING EXPERIENCE

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**Teaching Assistant** | *University of California, Riverside*

Jan 2023 – Present

Laboratory sections for general physics for engineering and pre-medical undergraduates

**Physics Teacher** | *Tutor*

2018 – 2022

Collaborated one-on-one with high school students, providing personalized instruction and guidance in physics

## WORKSHOPS AND TRAINING

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**AstroTech Summer School on Astronomical Instrumentation**

July 2024

*University of California, Berkeley*

*Berkeley, CA*

- Selected for a prestigious program focused on building astronomical instruments.
- Hands-on experience in astronomy and optics.

**FAR-ANSEF ICTP Summer School**

Aug 2019

*Yerevan, Armenia*

- Gained in-depth knowledge through lectures on theoretical physics and mathematical modeling.

## AWARDS & HONORS

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- Dean's Distinguished fellowship, University of California, Riverside
- Tuition waiving scholarship for masters in Physics at Alzahra University
- Tuition waiving scholarship at Sharif University of Technology
- Ranked within the top 7 percent among 6500 Physics applicants in Nation-wide M.Sc University entrance exam
- Ranked within the top 0.5 percent among 274000 applicants in Nation-wide B.Sc University entrance exam in mathematics and physics branch, Iran
- Ranked 2nd among the province-wide competitors in High School Physics Laboratory Competition, Iran

## OUTREACH & SCIENCE COMMUNICATION

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- Author and Editor in Astrobites (Winter 2025- Present)
- Founder and president of AURORA : Astronomy Union for Reading, Outreach and Research Activities in UCR
- Author of Staryab website – Staryab is a monthly astrophysical literature website in Farsi managed by Iranian astronomers across the world (Winter 2024- Present)
- Served as a judge at the Riverside Unified Science and Engineering Fair. Evaluated and provided constructive feedback on student projects, assessing scientific rigor, innovation, and presentation skills (Jan 2024)
- Collaborated with UCR astroclub to facilitate several telescope nights aimed at introducing astronomy to children and public (Jan 2023- Present)
- Participated in organizing and conducting astronomy education activities for children aged 6-10. Designed engaging sessions, including hands-on projects such as creating a Gravity Simulator (Fall 2023)