

# Curriculum Vitae

## Personal Details

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**Full Name:** Hamed Ghaderi  
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## Education

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2022-Present University of Zanjan, Zanjan, Iran  
**M.Sc in Gravity and Cosmology**  
2016-2020 Salman Higher Education Institute, Mashhad, Iran  
**B.Sc in Computer Software Engineering**

## Publication

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1. Safari, Hossein; Alipour, Nasibe; Ghaderi, Hamed; Garavand, Pardis; Zernike moments descript of solar and astronomical features: Python code; IJAA 2023

## Certification

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1. **Astronomical Photometry (Data Analysis of Galaxies)**  
Observational Astronomy Summer School  
Institute for Research in Fundamental Sciences (IPM) August 2013
2. **6<sup>th</sup> National Meeting on Astronomy and Astrophysics**  
Birjand University January 2013
3. **Workshop on Observational Astronomy**  
Ferdowsi University of Mashhad (FUM) January 2018
4. **Meeting on Cosmology: from theory to observations**  
Institute for Research in Fundamental Sciences (IPM) February 2018
5. **International Astrometric Search Collaboration**  
Hardin-Simmon University and Pan-Starrs observatory July-August 2018
6. **11<sup>th</sup> National Meeting on Astronomy and Astrophysics**  
Ferdowsi University of Mashhad January-February 2018
7. **National Meeting on Gravity and Cosmology**  
Sharif University of Technology January 2023
8. **16<sup>th</sup> National Meeting on Astronomy and Astrophysics (Oral Presentation)**

## 9. Workshop on Cosmology: from theory to observations

Institute for Research in Fundamental Sciences (IPM)     August 2023

### Research Activities

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#### 1. Photometry 100 Data of Centre of Galaxy M101

IRAF Data Analysis System (Scisoft, ESO)

Images: HST (Hubble Space Telescope) 2014

#### 1. Photometry 40 Data of Galaxy M33

IRAF Data Analysis System (Scisoft, ESO)

Images: INT (Isaac Newton Telescope) 2014

#### 2. Data Analysis on Near-Earth Objects and Main Belt Astroid

Astrometrica Software for photometrical data

Images: Pan-Starrs Observatory 2018

#### 3. Development of a program for astronomical data analysis in Python

Salman Higher Education Institute, Mashhad, Iran 2019 - 2020

#### 4. Automated Galaxy Classification with Machine Learning and Deep Learning Algorithms

University of Zanjan, Zanjan, Iran 2022 – 2023

### Awards

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Second place in the National competition of the Transit of Mercury IRAN-2016

### Invited Talks

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1. Astronomical Club of Mashhad, Iran 2011-2013
2. Khayyam University, Curiosity landing on Mars, Mashhad, Iran August 2012
3. Khayyam University, World Space Week, Mashhad, Iran 2013
4. Academy of Sciences and Astronomy of Mashhad, World Astronomy Day, World Physics Day, Mashhad, Iran 2010-2013
5. Khayyam University of Mashhad, Introduction of Astro Photometry, Mashhad, Iran 2014
6. Khayyam University of Mashhad, Astrophotography, Mashhad, Iran 2017
7. Society of Photography, Astrophotography, Chenaran, Iran 2017
8. Salman Higher Education Institute, A Day with Astronomy, Mashhad, Iran 2018
9. University of Zanjan, Astronomers meeting, Zanjan, Iran 2023

### Teaching

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1. Astronomical Centre of Qom, Introduction of Astronomy 2006-2007
2. Observatory of Astronomical Centre of Qom, Introduction of Observational Astronomy 2006-2008
3. Astronomical Centre of Qom, Dynamical Astronomy for Students Participating in the Olympiad of Astronomy 2009
4. Astronomical Centre of Qom, Stellar Astrophysics for Students Participating in the Olympiad of Astronomy 2009

5. Khayyam University of Mashhad, Observational Astronomy and Introduction of Photometry 2013-2015
6. Khayyam University of Mashhad, Professional Astro Photography, Summer 2014
7. Besat High School, Introductory and Special Subjects of Astronomy, Mashhad 2014-2015
8. Khayyam University of Mashhad, Professional Astro Photometry, Mashhad, Iran 2014
9. Ferdowsi Academy, Photography Workshops, Mashhad, Iran 2018
10. Khayyam University of Mashhad, Physics of Science Photography, Mashhad, Iran 2022
11. University of Zanjan, Workshop on observation astronomy, Zanjan, Iran 2023

## Research Interests

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1. Observational Cosmology
2. Galactic and Extra-Galactic Data Analysis
3. Formation and Evolution of Galaxies
4. Imaging and Spectroscopic Data mining
5. ML and DL cosmology
6. Big Data

## Skills and Expertise

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Python, Cosmology, Data Science, Amateur Astronomy, Machine Learning, Deep Learning, Neural Networks, CAMB, CosmoMC, Wolfram Mathematica, Git, IRAF, Linux, Adobe, Astro Photography, Hyper-lapse and Timelapse Videography, Teaching, Public Speaking.

## Languages

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English (fluent - B1)

Persian (native)