Mahan Mirza Khanlari

*Curriculum Vitae*

# CONTACT INFORMATION

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# EDUCATION

**University of Texas at Austin**, Austin, TX **Anticipated 2030**

*PhD. in Astronomy* Advisor: Karl Gebhardt

**University of Texas at Austin**, Austin, TX **May 2024**

*BS in Astronomy & BS in Physic Dean’s Honored Graduate (Research Distinction)* Advisor: Karl Gebhardt

# FIELD INTERESTS

Circumgalactic Medium & Intergalactic Medium, The Cosmic Web, Evolution of high redshift galaxies, Lyman Alpha Forest, Machine learning with big data

# RESEARCH EXPERIENCE

**University of Texas at Austin**, Department of Astronomy

*Undergraduate & Graduate Research Assistant,* HETDEXMay 2023 -Present

Advisor: Karl Gebhardt

* Project 1: Probing neutral Hydrogen in the CGM of Lyα Emitters in HETDEX
* Project 2: Removing False Detection Emission Lines in HETDEX through Dimensionality Reduction and Visualization

# SCHOLARSHIPS

* Summer Undergraduate Research Funding (SURF), **University of Texas at Austin**, Department of Astronomy ($2400)
* John Kelley Texas Amateur Astronomers’ Scholarship. **University of Texas at Austin**, Department of Astronomy ($1500)

# PUBLICATIONS

* "Probing neutral hydrogen in the circumgalactic medium of Lyman Alpha Emitters in HETDEX", ***Mahan Mirza Khanlari*** *et al. submitted.*
* "Absorption Troughs of Lyman Alpha Emitters in HETDEX", *Laurel H. Weiss et al 2024 ApJ 962 102*
* " Using Millions of Spectra to Explore HI Density Around Lyman Alpha Emitters in HETDEX", AAS 243rd Meeting, New Orleans, Louisiana, Jan 2024 – Poster

# SCIENCE TALKS

# Applications of Machine Learning in HETDEX, UT Board of Visitors (BoV) meeting, McDonald Observatory, Fort Davis, TX - Feb 2024

# Exploring HI Density Around & Between Lyman Alpha Emitter, HETDEX Large Scale Structure Group, Oct 2023

# Probing neutral hydrogen in the circumgalactic medium of Lyman Alpha Emitters in HETDEX - HETDEX Annual Meeting, Penn State University, May 2024

# OBSERVING TIME

# 2.7 m (107") Harlan J. Smith Telescope 9 Nights

# PUBLIC OUTREACH

**Astronomy Student Association, University of Texas at Austin**, Department of Astronomy

Public Outreach Event, Enchanted Rock, TX, Oct 2022

* Provided telescopes for attendees, enabling direct observations of celestial objects including planets and nebulae.
* Offered detailed explanations and insights on the observed celestial objects, enriching the attendees' understanding and appreciation.

# WORK EXPERIENCE

**University of Texas at Austin**, Department of Astronomy

*McDonald Observatory Student Assistant*, May 2022 – Aug 2022

Supervisor: Anna V. Boxall

* Assisted in administrative tasks, including preparing and dispatching monthly mail correspondence to the observatory donors.
* Updated member profiles, recorded donations, and managed communications, sending both weekly and monthly emails.

**University of Texas at Austin**, Gregory Gymnasium

*Facility Assistant, May 2022 – Aug 2022 | May 2023 – Aug 2023*

Supervisor: Ian P. Overman

* Maintained gym facilities and ensured safety and cleanliness.
* Assisted gym members with queries and equipment.

# SKILLS

* Python
* Machine Learning: t-SNE, Umap, PCA, TensorFlow
* Experience with Linux computing & JupyterLab environment
* Parallel computing: slurm job scheduling
* Photoshop, Lightroom
* Astrophotography & Macro photography

# LANGUAGES

# English: Fluent

* Persian: Native