

# Mahan Mirza Khanlari

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## EDUCATION

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

*BS in Astronomy and Physics*

Expected Graduation: May 2024

## RESEARCH EXPERIENCE

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

*Undergraduate Researcher*, HETDEX, May 2023 - Present

Advisor: Karl Gebhardt

- Designed a pipeline with a combination of unsupervised and supervised machine learning to automat artifact removal from the HETDEX catalog. Reduced artifact detections by over ~2% per data release. Used in a variety of fields of research by HETDEX members.
- Currently investigating HI density around and in between LAEs at  $z \sim 1.9-3.5$  with Lyman Alpha absorption.

## SCHOLARSHIPS

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**SURF**: Summer Undergraduate Research Funding, **University of Texas at Austin**, Department of Astronomy

\$2400 | May 2023-Aug 2023

## POSTERS & PAPERS

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- "Exploring HI Density up to ~1 Mpc Around Lyman Alpha Emitters in HETDEX", AAS 243<sup>rd</sup> Meeting, New Orleans, Louisiana, Jan 2024 – Poster
- "Exploring HI Density up to ~1 Mpc Around Lyman Alpha Emitters in HETDEX", Bash Symposium, University of Texas at Austin, Oct 2023 – Poster
- Average Lyman Alpha Profile, Laurel Wiess et al. (Including **Mahan Mirza Khanlari**), in prep – Paper
- "Exploring HI Density up to ~1 Mpc Around Lyman Alpha Emitters in HETDEX", **Mahan Mirza Khanlari** et al. in prep for 2024. – Paper

## INVITED TALKS

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

## PUBLIC OUTREACH

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**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.

## EXPERIENCE

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

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

Supervisor: Anna 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.

## TECHNICAL SKILLS

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- Programming: Python
- Machine Learning: t-SNE, Umap, PCA, TensorFlow
- Software: Photoshop
- Other: Astrophotography, Macro photography

## LANGUAGES

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- English: Fluent
- Persian: Native