

# DRUHAN SHAH

## Undergraduate Student Researcher

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Hyderabad, India

DruhanShah

druhan-shah

## EDUCATION

### MS in Computational Linguistics by Research

IIIT Hyderabad

Nov 2021 – Ongoing

### BTech (Hons) in Computer Science

IIIT Hyderabad

Nov 2021 – Ongoing

## EXPERIENCE

### Undergraduate Researcher

Language Technologies Research Centre

May 2023 – Ongoing

IIIT Hyderabad

Exploring Mechanistic Interpretability of Language Models using formal languages.

## PROJECTS

### Numerical Feature Extraction

Amazon ML Challenge

Sep 2024

Devised a novel architecture for a deep neural model to extract numerical features like height, weight, etc. from product images. Achieved an F1 score of 0.693 and achieved Rank 14 in the contest.

### Parse Probing with PEGs

Ongoing

Investigating sequence models trained to replicate complex recognition grammars using mechanistic techniques to uncover parse state information.

### Indic Morphosemantic Circuits

Course Project: Advanced NLP

Ongoing

Uncovering circuits in monolingual language models for semantic role detection and investigating their role on morphological complexity, particularly with Indian languages.

### ContractNLI

Course Project: Introduction to NLP

Implemented architectural changes to baseline models trained to perform NLI on legal documents with evidential spans, achieving near-SotA performance.

## VOLUNTEERING

### Problem Committee and Jury

Panini Linguistics Olympiad

Jan 2024 – Ongoing

Contributed and tested problems for the Panini Linguistics Olympiad and evaluated submissions for the National and Asia-Pacific rounds.

### Coordinator, Theory Group

Theory Group @ IIITH

May 2023 – Jun 2024

Organized discussions and seminars on various topics including theoretical CS, mathematics, music theory and physics.

## ACHIEVEMENTS

### Amazon ML Challenge

Rank 14 in India

### Dean's List Award

Spring '22 and Monsoon '22

### International Olympiads

Mathematics, Linguistics, Informatics, Astronomy

## SKILLS

### Languages:

Python C/C++ JavaScript Lisp  
Lua L<sup>A</sup>T<sub>E</sub>X

### Libraries and Tools:

Pytorch Transformers React Astro.js  
Vim Emacs Git SLURM