

# 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.

ContractNLI

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

LaTeX

Libraries and Tools:

Pytorch

Transformers

React

Astro.js

Vim

Emacs

Git

SLURM