

# VSDS Mahesh Akavarapu

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## Research Interests

Computational Linguistics / Natural Language Processing, Historical Linguistics

As part of my PhD thesis, I worked on Axial Transformers and Graph-Attention-based architectures over the central problems in historical linguistics incorporating insights from Evolutionary Biology. Additionally, I worked on Phylogenetic testing of language families.

## Education

<b>PhD</b>	<b>Indian Institute of Technology Kanpur</b> , Computer Science	July 2019 to present
	<ul style="list-style-type: none"> <li>GPA: 3.84/4.00 (9.6/10.0)</li> <li>Advisor: Prof. Arnab Bhattacharya</li> </ul>	
<b>BTech</b>	<b>Indian Institute of Technology Kanpur</b> , Computer Science, Physics (Second Major)	July 2014 to May 2019
	<ul style="list-style-type: none"> <li>GPA: 3.72/4.00 (9.3/10.0)</li> </ul>	

## Awards / Honors

**Prime Minister's Research Fellowship (2019-24):** Grant of INR 200,000 per year (approx. USD 12,000 in total) from Ministry of Education, Government of India

**Academic Excellence Award from IIT Kanpur (2015-16):** Awarded to Top 10% students of the batch

## Experience

<b>Indian Institute of Technology Kanpur</b> , Research Fellow	Kanpur, India
<ul style="list-style-type: none"> <li>Under Prime Minister's Research Fellowship</li> </ul>	Aug. 2019 to July 2024 4 years 11 months
<b>Indian Institute of Technology Kanpur</b> , Student Researcher, Intern	Kanpur, India
<ul style="list-style-type: none"> <li>High Performance Computing in CUDA (Guide: Prof. Mahendra K. Verma)</li> </ul>	May 2018 to July 2018 2 months

## Publications

<b>A Likelihood Ratio Test of Genetic Relationship among Languages</b>	June 2024
V.S.D.S.Mahesh Akavarapu, Arnab Bhattacharya	
Accepted to <b>NAACL 2024</b> (main), Mexico City, Mexico	
<b>Automated Cognate Detection as a Supervised Link Prediction Task with Cognate Transformer</b>	Mar. 2024
V.S.D.S.Mahesh Akavarapu, Arnab Bhattacharya	
Proc. of <b>EACL 2024</b> , St. Julian's, Malta	
<b>Cognate Transformer for Automated Phonological Reconstruction and Cognate Reflex Prediction</b>	Dec. 2023
V.S.D.S.Mahesh Akavarapu, Arnab Bhattacharya	
Proc. of <b>EMNLP 2023</b> , Singapore	

## Creation of a Digital Rig Vedic Index (Anukramani) for Computational Linguistic Tasks

Jan. 2023

V.S.D.S.Mahesh Akavarapu, Arnab Bhattacharya

Proc. of **World Sanskrit Conference 2023**, Canberra, Australia

## Invited Talks

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- Evolutionary Biology-Inspired Language Models in Historical Linguistics, University of Tübingen (Online), Apr. 2024
- Tutorial on LLMs: Finetuning and Prompting, with Arnab Bhattacharya and Shubham K. Nigam, NIT Warangal (Online), Mar. 2024
- Tutorial on Legal Named Entity Recognition, with Shubham K. Nigam, NIT Trichy (Online), Dec. 2022

## Technologies

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**Languages:** Python, C/C++, HTML, Shell Scripting etc.

**Libraries:** PyTorch, TensorFlow, HuggingFace, Pandas etc.