

VSDS Mahesh Akavarapu

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Research Interests

Computational Linguistics / Natural Language Processing, Historical Linguistics

Specifically: Computational Historical Linguistics, Speech Processing, Low Resource NLP

Education

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| PhD | Indian Institute of Technology Kanpur , Computer Science | July 2019 – Sept 2024 |
| | <ul style="list-style-type: none"> • GPA: 3.84/4.00 (9.6/10.0) • Advisor: Prof. Arnab Bhattacharya | |
| BT | Indian Institute of Technology Kanpur , Computer Science, Physics (Second Major) | July 2014 – May 2019 |
| | <ul style="list-style-type: none"> • GPA: 3.72/4.00 (9.3/10.0) | |

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): Awarded to Top 10% students of the batch

Experience

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| University of Tübingen , Postdoctoral Researcher | Tübingen, Germany |
| <ul style="list-style-type: none"> • Advisor: Prof. Gerhard Jäger | Jan 2025 – present |
| Indian Institute of Technology Kanpur , Research Fellow | Kanpur, India |
| <ul style="list-style-type: none"> • Under Prime Minister's Research Fellowship (Advisor: Prof. Arnab Bhattacharya) | Aug 2019 – July 2024 |
| Indian Institute of Technology Kanpur , Student Researcher, Intern | Kanpur, India |
| <ul style="list-style-type: none"> • High Performance Computing in CUDA (Advisor: Prof. Mahendra K. Verma) | May 2018 – July 2018 |

Publications

A Case Study of Cross-Lingual Zero-Shot Generalization for Classical Languages in LLMs

V.S.D.S.Mahesh Akavarapu, Hrishikesh Terdalkar, Pramit Bhattacharyya, Shubhangi Agarwal, Vishakha Deulgaonkar, Pralay Manna, Chaitali Dangarikar, Arnab Bhattacharya

Accepted to Findings of **ACL 2025**

A Likelihood Ratio Test of Genetic Relationship among Languages

June 2024

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

Proc. of **NAACL 2024**, Mexico City, Mexico

Automated Cognate Detection as a Supervised Link Prediction Task with Cognate Transformer

Mar 2024

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

Proc. of **EACL 2024**, St. Julian's, Malta

Cognate Transformer for Automated Phonological Reconstruction and Cognate Reflex Prediction

Dec 2023

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

Proc. of **EMNLP 2023**, Singapore

Invited Talks

- 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

Teaching Assistance

- (CS 689) *Computational Linguistics for Indian Languages*, Instructor: Prof. Arnab Bhattacharya (Spring 2024, Fall 2022)
- (CS 63) *Theory of Computation*, Instructor: Dr. Raghunath Tewari (Fall 2023, Fall 2022)
- (CS 315) *Principles of Database Systems*, Instructor: Prof. Arnab Bhattacharya (Spring 2023, Spring 2021)
- (CS 657) *Information Retrieval*, Instructor: Prof. Arnab Bhattacharya (Spring 2022)
- (CS 771) *Introduction to Machine Learning*, Instructor: Dr. Nisheeth Srivastava (Fall 2021)
- (CS 685) *Data Mining*, Instructor: Prof. Arnab Bhattacharya (Fall 2020)
- (ESC 101) *Fundamentals of Computing*, Instructor: Dr. Nisheeth Srivastava (Spring 2020), Dr. Piyush Rai (Fall 2019)

Technologies

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

Libraries: PyTorch, TensorFlow, LangChain, HuggingFace etc

Personal Details

Full Name: Akavarapu, Venkata Satya Durga Sai Mahesh

Gender: Male, **Age:** 28, **Nationality:** Indian