

# ADITYA YADAVALLI

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## EDUCATION

**International Institute of Information Technology, Hyderabad (IIIT-H)** 2017 – 2022  
B.Tech. in Computer Science (Hons.) & M.S in Computational Linguistics

Committee: [Prof. Anil Kumar Vuppala](#) (advisor), [Dr. Kishore Prahallad](#), [Prof. Chiranjeevi Yarra](#)  
Thesis: Leveraging Language Relatedness to Improve Language Models in Speech Recognition Systems

## EXPERIENCE

**Karya** Jun 2022 – Present  
*Speech/NLP Engineer, Mentor: [Dr. Vivek Seshadri](#)* Remote

**Dept. of Cognitive Science, Case Western Reserve University** Oct 2021 – Jul 2023  
*Visiting Researcher, Advisor: [Prof. Vera Tobin](#)* Remote

**Speech Processing Lab, IIIT-H** May 2019 – May 2022  
*Researcher Assistant, Advisor: [Prof. Anil Kumar Vuppala](#)* Hyderabad, India

## PUBLICATIONS (J=JOURNAL, C=CONFERENCE, W=WORKSHOP, S=IN SUBMISSION)

- [C.1] **Aditya Yadavalli\***, Alekhya Yadavalli\*, Vera Tobin, “SLABERT Talk Pretty One Day: Modeling Second Language Acquisition with BERT”, In Proceedings of the 61th Annual Meeting of the Association for Computational Linguistics 2023.
- [C.2] Abraham Owodunni\*, **Aditya Yadavalli\***, Chris Emezue\*, Tobi Olatunji\*, Clinton Mbataku, “AccentFold: A Journey through African Accents for Zero-Shot ASR Adaptation to Target Accents”, In Findings of the Association for Computational Linguistics: EACL 2024.
- [J.1] Tobi Olatunji, Tejumade Afonja, **Aditya Yadavalli**, ..., “AfriSpeech-200: Pan-African Accented Speech Dataset for Clinical and General Domain ASR”, In Transactions of Association for Computational Linguistics 2023.
- [C.3] Mehrad Moradshahi\*, Tianhao Shen\*, Kalika Bali, Monojit Choudhury, ..., **Aditya Yadavalli**, Chaobin You, Deyi Xiong, Monica Lam, “X-RiSAWOZ: High-Quality End-to-End Multilingual Dialogue Datasets and Few-shot Agents”, In Findings of the Association for Computational Linguistics: ACL 2023.
- [C.4] Shelly Jain\*, **Aditya Yadavalli\***, Ganesh S Mirishkar, Anil Kumar Vuppala, “How do Phonological Properties Affect Bilingual Automatic Speech Recognition?”, 2022 IEEE Spoken Language Technology Workshop (SLT).
- [C.5] **Aditya Yadavalli**, Ganesh S Mirishkar, Anil Kumar Vuppala, “Multi-Task End-to-End Model for Telugu Dialect and Speech Recognition”, In Proceedings of Interspeech 2022.
- [W.1] **Aditya Yadavalli**, Ganesh S Mirishkar, Anil Kumar Vuppala, “Exploring the Effect of Dialect Mismatched Language Models in Telugu Automatic Speech Recognition”, In Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Student Research Workshop.
- [W.2] Varun Gumma, Rishav Hada, **Aditya Yadavalli**, Pamir Gogoi, Ishani Mondal, Vivek Seshadri, Kalika Bali, “MunTTS: A Text-to-Speech System for Mundari”, In Proceedings of the Seventh Workshop on the Use of Computational Methods in the Study of Endangered Languages.

- [C.6] **Aditya Yadavalli**, Shelly Jain, Ganesh S Mirishkar, Anil Kumar Vuppala, “Investigation of Subword-Based Bilingual Automatic Speech Recognition for Indian Languages”, In Proceedings of the 2022 Fourteenth International Conference on Contemporary Computing (IC3-2022).
- [C.7] Shelly Jain\*, **Aditya Yadavalli\***, Ganesh S Mirishkar\*, Chiranjeevi Yarra, Anil Kumar Vuppala, “IE-CPS Lexicon: An Automatic Speech Recognition Oriented Indian-English Pronunciation Dictionary”, In Proceedings of the 18th International Conference on Natural Language Processing (ICON) 2021.
- [C.8] Ganesh S Mirishkar, **Aditya Yadavalli**, Anil Kumar Vuppala, “An Investigation of Hybrid architectures for Low Resource Multilingual Speech Recognition system in Indian context”, In Proceedings of the 18th International Conference on Natural Language Processing (ICON) 2021.
- [C.9] Nayan Vats, **Aditya Yadavalli**, Krishna Gurugubelli, Anil Kumar Vuppala, “Acoustic Features, BERT Model and their Complementary Nature for Alzheimer’s Dementia Detection”, In Proceedings of the 2021 Thirteenth International Conference on Contemporary Computing (IC3-2021).

## SELECTED PROJECTS

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### **Sanmati**

*April 2023 –*

Advisor: *Dr. Kalika Bali, Dr. Vivek Seshadri*

- Funded by Bill & Melinda Gates Foundation (BMGF)
- Evaluating for gender-bias in ASR and MT systems for low-resource Indic languages
- Designing task & its instructions to create the largest gender-intentional dataset to mitigate bias in NLP models

### **Voice Chatbot for Tuberculosis Awareness**

*Jun 2023 –*

Advisor: *Dr. Vivek Seshadri*

- Funded by Karnataka Health Promotion Trust (KHPT)
- Designed mechanisms to automatically verify crowd-sourced Kannada TB speech dataset
- Built the Kannada Tuberculosis ASR system that powers the chatbot

### **Second Language Acquisition Language Models**

*Oct 2021 – Jul 2023*

Advisor: *Prof. Vera Tobin*

- Collect and curate age-ordered Child Directed Speech (CDS) for 5 different languages
- Compare Second Language Acquisition (SLA) in CDS pretrained LMs and humans
- Explore commonalities across CDS of various languages and cultures

### **ASR Track in AmericasNLP at NeurIPS 2022**

*Sep 2022 – Nov 2022*

Advisor: *Dr. Kalika Bali, Dr. Sunayana Sitaram, Dr. Vivek Seshadri*

- Part of the Karya-MSRI team that participated in AmericasNLP 2022 Shared Task
- Explored feature fusion techniques and utilized language models to select the best ASR model
- 3rd best performance in ASR track 1

### **MUltilingual and Code-Switching ASR Challenges (MUCS)**

*Feb 2021 – Apr 2021*

Advisor: *Prof. Anil Kumar Vuppala*

- Part of the IIIT-H team that participated in the MUCS challenge
- Achieved best Telugu WER by an absolute margin of 4.88%
- 11th overall in the multilingual ASR subtask

## Performance Measurement for Broadcast Speeches

May 2019 – April 2020

Principal Investigators: *Prof. Rajeev Sangal, Prof. Dipti Sharma, Prof. Anil Vuppala*

- Part of the bigger National Language Translation Mission for Indian Languages funded by Ministry of Electronics & Information Technology (MeitY), India.
- Part of the IIIT-H Team that evaluated the existing ASR, MT, and TTS systems

## TEACHING EXPERIENCE

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### Alternate Religious Traditions in Indian History

Spring 2021

Teaching Assistant, Instructors: *Prof. Nilam Kakati, Prof. Aniket Alam*

Hyderabad, India

### Speech Signal Processing

Monsoon 2020

Teaching Assistant, Instructor: *Prof. Anil Kumar Vuppala*

Hyderabad, India

## SERVICE

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**Reviewer** DravidianLangTech at ACL 2022, ACL 2023, EMNLP 2023, ARR 2023

**Volunteer** Clinical Speech Group at Masakhane

**Contributor** Dialogues@Stanford-Oval

## HONOURS/AWARDS

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**Travel Grant** Recipient of NAACL SRW Travel Grant in 2022

**Academic Performance** Part of the Merit List in Spring 2021

**Academic Performance** Part of the Merit List in Monsoon 2020

**Academic Performance** Part of the Dean's List in Spring 2020

## MISCELLANEOUS

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**Computer Languages** Python, C/C++, Bash, Swift, Javascript

**Frameworks** PyTorch, HuggingFace Transformers, React

**Toolkits** ESPnet, Kaldi, Moses