

ADITYA YADAVALLI

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EDUCATION

International Institute of Information Technology, Hyderabad (IIIT-H) 2017 – 2022
M.S in Computational Linguistics
B.Tech. in Computer Science (Hons.)
Committee: [Prof. Anil Kumar Vuppala](#) (advisor), [Dr. Kishore Prahallad](#), [Prof. Chiranjeevi Yarra](#)
Thesis: Leveraging Language Relatedness to Improve Language Models in Speech Recognition Systems

RESEARCH 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] Rishav Hada, Safiya Husain, Varun Gumma, Harshita Diddee, **Aditya Yadavalli**, ..., Aditya Vashistha, Vivek Seshadri, Kalika Bali, “*“Akal Badi ya Bias”*: An Exploration Study of Gender Bias in Hindi”, Proceedings of the 2024 ACM Conference on Fairness, Accountability, and Transparency (FAccT ’24) [[Best Paper Award](#)].
- [C.4] Ishaan Watts, Varun Gumma, **Aditya Yadavalli**, Vivek Seshadri, Manohar Swaminathan, Sunayana Sitaram “PARIKSHA : A Large-Scale Investigation of Human-LLM Evaluator Agreement on Multilingual and Multi-Cultural Data”, 2024 Conference on Empirical Methods in Natural Language Processing.
- [C.5] 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.6] 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.7] **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.8] Advait Bhat*, Nidhi Kulkarni*, Safiya Husain, **Aditya Yadavalli**, Jivat Neet Kaur, Anurag Shukla, Monali Shelar, Vivek Seshadri, “Speaking in Terms of Money: Financial Knowledge Acquisition through Speech Data Generation”, Proceedings of the 7th ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (COMPASS '24).
- [C.9] **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.10] 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.11] 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.12] 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

Measuring Mutual Information Between the Task, Speech & Text

May 2024 –

Advisor: *Prof. Alex Warstadt*

- Create a multimodal pipeline that helps us understand how information (in human communication) is conveyed through lexical and non-lexical streams.
- We evaluate this on complex cognitive tasks: sarcasm detection, emotion detection, lexical disambiguation, turn-taking

Sanmati

April 2023 –

Advisors: *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
- Covered as part of the TIME cover story [here](#)

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

Advisors: *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

Advisors: *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

Alternate Religious Traditions in Indian History

Spring 2021

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

Hyderabad, India

SERVICE

Reviewer	ARR 2023 – 2024, NAACL SRW 2024, EMNLP 2023, ACL 2023, DravidianLangTech@ACL 2022
Volunteer	Clinical Speech Group at Masakhane
Contributor	Dialogues@Stanford-Oval

HONOURS/AWARDS

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

Computer Languages	Python, C/C++, Bash, Swift, Javascript
Frameworks	PyTorch, HuggingFace Transformers, React
Toolkits	ESPnet, Kaldi, Moses