

Akshay M Mendhakar

RESEARCHER & **SPEECH LANGUAGE PATHOLOGIST**, MSLP, BASLP

- LANGUAGE PROCESSING & PRODUCTION • COGNITION • LITERARY TEXT ANALYSIS • MACHINE LEARNING
- ASSISTIVE TECHNOLOGIES • HUMAN-COMPUTER INTERACTION

Researcher at the Faculty of Applied Linguistics, University of Warsaw

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SPEECH LANGUAGE PATHOLOGIST CUM DATASCIENTIST

As a Cognitive-Linguistic scientist who is interested in Data Science, I have developed some technical skills as a software programmer as well. Experienced in diagnostics and clinical management of individuals with disorders I have been working on research projects that focus on the cognitive process involved in reading and neuropsychology of the brain. Also, I am well-versed in all phases of the software development lifecycle, with a strong working knowledge of algorithms, data structures, and programming skills. My research interests lie in the design, development, and implementation of novel concepts and user interfaces in the fields of cognitive linguistics and psycholinguistics. Recently, I have been fascinated with user-centered design and empirical aesthetics of literary text perception in reading.

POSITIONS HELD

Visiting Researcher	<p><i>Project Title – Literary text perception and comprehension</i> ELIT-The Empirical study of literature training network https://www.elitnetwork.eu/ Location: Faculty of Applied Linguistics, University of Warsaw</p> <p>Advisor: Dr. Monika Płużyczka</p>	December 2020 - Present HOD Translation Studies at the Institute of Specialized Communication and Culturology
Research Officer	<p><i>Project Title- Development of Speech Enabled Communication Tool for Clients with Speech Impairment in Kannada</i> Location: AIISH, Mysore, India- www.aiishmysore.in Advisor: Mr.Manohar N</p>	Oct 2019- November 2020 (14 months) HOD, Dept of electronics
Speech-language Pathologist – Grade II	<p><i>Department of Clinical Services,</i> All India Institute of Speech and Hearing - www.aiishmysore.in Location: Mysore, India Advisor: Prof N Sreedevi</p>	May 2019- Sep 2019 (4 months) HOD, DCS
Research Specialist	<p>Tiger DRS/VoiceTech - www.drsspeech.com/ www.voicetech.in Dr.Speech& Assistive Technologies Advisor: Mr.Devendra Vartak</p>	Oct 2018- April 2018 (6 months) Proprietor
Speech-language Pathologist – Grade I	<p>DHLS, Mysore, All India Institute of Speech and Hearing - www.aiishmysore.in Location: Mysore, India Advisor: Dr. Jayshree Shanbal</p>	Oct 2017 – Oct 2018 (12 months) DHLS, Coordinator

Speech-language
Pathologist- Grade II

**Project Title- Survey of Communication disorders by trained
ASHA Workers in the districts of Mysuru, Mandya and
Chamarajanagara**

Location: AIISH, Mysore, India- www.aiishmysore.in

Advisor: Prof S R Savithri

Jul 2017 – Oct 2017
(3 months)

The Director, AIISH Mysuru.

EDUCATION

PhD in Linguistics
PhD in Psychology

**Doctoral school of humanities, University of Warsaw
University of Vienna, Austria**

Thesis Title: Literary text perception and comprehension
Supervisor at Warsaw: Prof. Monika Płużyczka
Supervisor at Vienna: Prof. Helmut Leder

October 2020 - Present

Visiting researcher as part of
ELIT network

Master in Speech-
Language Pathology

**All India Institute of Speech and Hearing - www.aiishmysore.in
UNIVERSITY OF MYSORE, Mysuru, Karnataka**

Dissertation Title: A screening test of articulation in Kannada
using dynamic time warping (DTW) – a prototype
Guide: Prof. S. R. Savithri
Grade: 9/10

Jul 2015- Jun 2017

With a clinical experience of
over 900 hours

Bachelor in
Audiology and
Speech- Language
Pathology

**All India Institute of Speech and Hearing - www.aiishmysore.in
UNIVERSITY OF MYSORE, Mysuru, Karnataka**

Grade: First Class

May 2011-Jun 2014

With a clinical experience
Of over 2000 hours

INTERNSHIPS

Internship at Exsof
Technologies

Exsof Technologies, Mysuru

Role: Head R&D team for Human Computer interaction Projects
Advisor: Mr. Ramesh

Oct 2018- Dec 2018

Internship at
Voice& Speech
Systems

**Voice and speech systems, Bangalore
(Vagmi Voice Software)**

Advisor: Dr. Ananthapadmanabhan T V

Oct 2018- Dec 2018

Institute
Internship

Location:

AIISH

Mysore, India

Role:

Speech language pathologist/Audiologist.

Advisor:

Dr. M.Pushpavathi

Jul 2014 – Nov 2014

With a clinical experience
of over 700 hours

Hospital
Internships

Civil hospital Dharwad

Advisor:

Dr. Ashok. M (Senior specialist Surgeon)

Location:

Dharwad, Karnataka.

Role:

Audiologist

Dec 2014- Feb 2015

Karnataka Institute of Medical Science (KIMS)

Location:

Neonatal Screening and diagnostic center, Hubli

Role:

Senior Speech language pathologist

Feb 2015- Apr 2015

Advisor: Dr. P. Ravindra Gadag(HOD of ENT)

Civil Hospital, Haveri

Apr 2015 – May 2015

Location: Haveri, Karnataka

Role: Audiologist

Advisors: Dr.Mallikarjun (Senior specialist surgeon)

PUBLICATIONS

- [1] Deep band modulation and noise effects: Perception of phrases in adults : Shetty, Hemanth Narayana, and **Akshay Mendhakar**. "Deep band modulation and noise effects: Perception of phrases in adults." *Hearing, Balance and Communication* 13.3 (2015): 111-117.<http://dx.doi.org/10.3109/21695717.2015.1058609>
- [2] Development of phrase recognition test in Kannada language: Shetty, H. N., & **Mendhakar, A.** (2015). Development of phrase recognition test in Kannada language. *Journal of Indian Speech Language & Hearing Association*, 29(2), 21.Available from:<http://www.jisha.org/text.asp?2015/29/2/21/185976>
- [3] **Mendhakar, Akshay. M.**, Sangeetha. M., & Rakshith. S. (2016). Application of Automatic Speech Recognition in Communication Sciences and Disorders. *Journal of Acoustical Society of India*, 43(2), 108-115. Retrieved December 06, 2016, from[http://www.acousticsindia.org/JASI2016Vol-43\(1-4\).pdf](http://www.acousticsindia.org/JASI2016Vol-43(1-4).pdf)
- [4] **Akshay Mendhakar**, Devi N, Renuka Chandrakanth, Ajish K Abraham.(2018).Need for Robotic Resources in Speech and Hearing - An Indian Study. *International Journal of Advances in Science Engineering and Technology*, ISSN(p): 2321 –8991, ISSN(e): 2321 –9009 Vol-6, Iss-1, Spl. Issue-1 Feb.- 2018,http://www.iraj.in/journal/journal_file/journal_pdf/6-445-152327495635-38.pdf
- [5] B P, Abhishek., &**Mendhakar, A.** (2018). Utility of Mobile Apps in Speech and Language Therapy: A Survey Study. *International Journal of Biomedical Engineering*, 4(1), 1-3.<http://materials.journalspub.info/index.php?journal=JBMBE&page=article&op=view&path%5B%5D=363>
- [6] **Mendhakar, A.**, & Priyadarshi, B. (2018). A relook into language tests in India: an explorative study. *A Relook into Language Tests in India: An Explorative Study*, 6(2), 1-20. Retrieved fromhttp://iclad.science-res.com/current_issue/Vol_6_issue_2_FULL_ISSUE.pdf
- [7] **Mendhakar, A. M.**, & Mahesh, S. (2018). Automatic annotation of reading using Speech Recognition: A pilot study. *Research & Reviews: A Journal of Bioinformatics*, 5(2),25-29.<http://techjournals.stmjournals.in/index.php/RRJoBI/article/view/216>
- [8] **Mendhakar, A. M.**, Baby, Eliza., && Renuka, C. (2018, December). Can we Accelerate Autism Discoveries through Eye Tracking and Machine Learning Technology? In *Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICECCOT), 2018 International Conference on* (pp. 1549-1552).IEEE.
- [9] **Mendhakar, A. M.**, & Mahesh, S. (2018, December). Automatic analysis of stuttered speech using dynamic time warping. In *Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICECCOT), 2018 International Conference on* (pp. 1745-1748).IEEE.
- [10] **Mendhakar, A. M.**, Sreedevi, N., Arunraj, K., & Shanbal, J. C. (2019). Infant Screening System Based on Cry Analysis. *International Annals of Science*, 6(1), 1-7.<https://journals.aijr.in/index.php/ias/article/download/757/180>
- [11] Hemanth Narayan Shetty &**Akshay Mendhakar** (2019) Effect of rate altered perception of deep band modulated phrase in noise from normal hearing younger and older adult groups, *Hearing, Balance and Communication*, 17:2, 154-164, DOI: [10.1080/21695717.2019.1591006](https://doi.org/10.1080/21695717.2019.1591006)

PRESENTATIONS

- [1] **Mendhakar, A. M.**, & Mahesh, S. (2018, December). Automatic analysis of stuttered speech using dynamic time warping. In *Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICEECCOT), 2018 International Conference on* (pp. 1745-1748).IEEE.
- [2] **Akshay, M.**, Sangeetha, M., & Fathima, M. (2015). Automatic annotation of read speech using speech recognition: A pilot study, *Proceedings of National Symposium on Acoustics- Book of Abstracts (NSA 7 to 9th October 2015, Goa)*, 79, CSIR-NIO: Belgaum, India.http://www.aiishmysore.in/en/pdf/Clinical_services_research_papers_published_in_conference.pdf
- [3] Sreedevi, N., Shanbal, J.C., Arunraj, K., Neethu, T., & **Akshay, M.** (2016). An Innovative Computerized Screening Tool for Infant cry Analysis in the Detection of Communication Disorders- A Pilot Study. Paper presented at India International Science Festival, 7th-11th December, CSIR-NPL,2016
- [4] Akshay M Mendhakar, Eliza Baby & Abhishek B P (2018). Aphasia Confidence Index (ACI) - An Objective measure of aphasic. Annual Convention of Indian Speech Language and Hearing Association (ISHA Con-2018), Mysuru (India), January 2018.
- [5] **Akshay Mendhakar.**, Jayashree C Shanbal ., (2018). Can we accelerate the identification of dyslexia using machine learning algorithms? Paper presented at India International Science Festival, 5th-8th October, IGP-YSC,Lucknow,2018
- [6] Jayashree C Shanbal, **Akshay Mendhakar**, Ashwini B N , Neha Yadav., (2018). Visual processing in children with Dyslexia: Through Eye-gaze technology.Paper presented at India International Science Festival, 5th-8th October, IGP-YSC,Lucknow,2018
- [7] **Mendhakar, A. M.**, Sneha, K., Devi, N., & Renuka, C. (2018, December). Adaptive machine learning -An innovative hearing aid technology. In *Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICEECCOT), 2018 International Conference on* (pp. 1319-1322).IEEE.
- [8] **Mendhakar, A. M.**, Baby, Eliza., && Renuka, C. (2018, December). Can we Accelerate Autism Discoveries Through Eye Tracking and Machine Learning Technology? In *Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICEECCOT), 2018 International Conference on* (pp. 1549-1552).IEEE.
- [9] **Mendhakar, A. M.**, & Mahesh, S. (2018, December). Automatic analysis of stuttered speech using dynamic time warping. In *Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICEECCOT), 2018 International Conference on* (pp. 1745-1748).IEEE.

INVITED TALKS

- [1] Orientation on E-module titled "Quick rehabilitation system using worldwide web", 21.09.2017 by Dept. of Speech Sciences, All India Institute of Speech & Hearing, Mysuru- Dr. K Yeshoda
- [2] Mahadevappa Rampure Medical College, Kalburgi on the topic "Professional voice analysis using various voice softwares", 01-03-2019(As part of CME by Dept of ENT)- Dr.C B Nandyal
- [3] Manipal University- Department of Speech & Hearing, "Advanced Speech Production experiments: An SLP's Point of view", 03-12-2019- Ms. Sheela.C
- [4] Pieta SLS clinic, Bangalore. "Introduction to AVAZ software: A step top step guide for special educators" on 06-03-2021- Ms.Eliza Baby

PRODUCTS

Speech Platform(<https://speechplatform.in/>)
Vocab (<https://voicetech.in/Vocab.html>)
Cogni Tools (<https://voicetech.in/Cognitools.html>)
Quick Rehabilitation System Using VWorld Wide web (<https://qrstuv.in/>)
Cochlear Habilitator (<http://cochlearhabilitator.com/>)
Aiish Awaaz 2016 (<http://www.aiishawaaz.com/>)

Software Development

ICry software(Infant cry analyser)
(<http://www.thehindu.com/news/national/karnataka/AiISH-gets-new-facilities/article13981832.ece>) Customer: AIISH/ Exsof technologies, Mysuru
Tinnitus Station- Tinnitus evaluation tool Customer: Danaah Medical Technologies.
(<http://tinnitusstation.com/>).

ASSET- App for Speech Sound error therapy Customer: AIISH , Mysuru
Vocab – Language learning lab Customer: VoiceTech, Mumbai
CogniTools- Cognitive Language Learning software Customer: VoiceTech, Mumbai

AWARDS

Black belt	<i>Shotokan Karate Do and martial arts</i>	Mar- 2004
	(Probation of Shotokan Karate Do and martial arts) from Mysore, Karnataka	
Young scientist award	1st place at JSS Suttur academic and science exhibition. Special appreciation and awarded by Dr. A. P. J . Abdul Kalam and Rajnath Singh	22-27 Jan 2009
Bal Shree award & scholarship	Creative scientific innovations By Representing south zone Location: National Bal Bhavan, Kotla Road, New Delhi	1-5th Dec, 2009
Scholarship	E-Module for Listening Comprehension IEEE INDIA SPECIAL INTEREST GROUP ON COMMUNICATION DISABILITY	24th Dec 2016

SUPPLEMENTARY SKILLS

Languages Fluent in English, Hindi, Kannada, Urdu, and Marathi(Native)
Scripting Languages JavaScript, Python, PHP, VBscript, C++,java, Visual Basic

Additional Languages

MATLAB, SQL
ASR Toolkits like CMU Sphinx, HTK Speech Recognition Toolkit, CMU-Cambridge Statistical LM Toolkit & Kaldi

Hands on experience with

Deep Learning using MATLAB, Tensor Flow & Microsoft Cognitive Toolkit (CNTK)

VOLUNTARY ACTIVITIES

Volunteer

Audiology India (NGO), Youth Hostel India (YAH) **2011 - 2017**
Leading of a youth group
Leading off an adventure treks
Leading Martial arts classes for children.
Leading adolescence summer camps (age 13 – 18)
Assistant in children summer camps (age 8 – 12)

ACCREDITATIONS

Indian Speech & Hearing Association (ISHA) - L17093020

Rehabilitation Council of India (RCI)- A57518

REFEREES

Prof. Monika Płużyczka

Head of the Department of Translation Studies at the Institute of Specialized Communication and Culturology,
University of Warsaw
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mpluzyczka@uw.edu.pl

Prof. Prema Rao

Former Professor of Speech Language Pathology
ALL INDIA INSTITUTE OF SPEECH AND HEARING, MYSURU
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VoiceTech, Mumbai
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