

Priyankoo Sarmah

Professor

Department of Humanities and Social Sciences
Centre for Linguistic Science and Technology
Indian Institute of Technology Guwahati

priyankoo@iitg.ac.in
+91 361 258 2574 (O)
+91 801 100 1755 (C)
www.iitg.ac.in/priyankoo

■ **Education:**

- 2009 PhD in Linguistics, University of Florida
2005 M.Phil. in Linguistics, Central Institute of English and Foreign Languages
2002 M.A. in Linguistics, Central Institute of English and Foreign Languages

■ **Work:**

- 2021- Present Professor, Indian Institute of Technology Guwahati.
2015- 2021 Associate Professor, Indian Institute of Technology Guwahati.
2011- 2015 Assistant Professor, Indian Institute of Technology Guwahati.
2008- 2011 Full-time lecturer, Hankuk University of Foreign Studies, South Korea.

■ **Research Interests:**

Tibeto-Burman languages, Phonetics and phonology of vowels and tones, language technology development, speech perception, speech recognition

■ **Research Languages:**

Angami, Assamese, Bodo, Dimasa, Mising, Mizo, Paite, Poula, Rabha, Tiwa

■ **Journal And book chapters**

1. Sarmah Priyankoo, Dihingia Leena. Assamese Dialect Identification From Vowel Acoustics. In: Nanda P., Verma V.K., Srivastava S., Gupta R.K., Mazumdar A.P. (eds) Data Engineering for Smart Systems. Lecture Notes in Networks and Systems, vol 238 (2022): . Springer, Singapore.
2. Tzudir, Moakala, Shikha Baghel, Priyankoo Sarmah & SR Mahadeva Prasanna. 2022a. Under-resourced dialect identification in ao using source information. *The Journal of the Acoustical Society of America* 152(3). 1755–1766.
3. Wiltshire, Caroline & Priyankoo Sarmah. 2022. Vowel duration before voiced and voiceless stops in the indian english of assamese speakers. *The Journal of the Acoustical Society of America* 152(4). A285–A285.
4. Horo, Luke, and Priyankoo Sarmah. “Phonetic Comparison of Orissa Sora.” *Advances in Munda Linguistics* (2021): 199.
5. Phukon, Bornali, Akash Anil, Sanasam Ranbir Singh, and Priyankoo Sarmah. “Synonymy Expansion Using Link Prediction Methods: A Case Study of Assamese WordNet.” *Transactions on Asian and Low-Resource Language Information Processing* 21, no. 1 (2021): 1-21.
6. Tzudir, Moakala, Priyankoo Sarmah, and SR Mahadeva Prasanna. "Analysis and modeling of dialect information in Ao, a low resource language." *The Journal of the Acoustical Society of America* 149, no. 5 (2021): 2976-2987.

7. Horo, Luke, Priyankoo Sarmah, and Gregory DS Anderson. "Acoustic phonetic study of the Sora vowel system." *The Journal of the Acoustical Society of America* 147, no. 4 (2020): 3000-3011.
8. Rabha, Saswati, Priyankoo Sarmah, and SR Mahadeva Prasanna. "Aspiration in fricative and nasal consonants: Properties and detection." *The Journal of the Acoustical Society of America* 146, no. 1 (2019): 614-625.
9. Borah, Bhriguraj, Dhruvajyoti Pathak, Priyankoo Sarmah, Bidisha Som, and Sukumar Nandi. "Survey of Textbased Chatbot in Perspective of Recent Technologies." In *International Conference on Computational Intelligence, Communications, and Business Analytics*, pp. 84-96. Springer, Singapore, 2018.
10. Saikia, Rajlakshmi, Sanasam Ranbir Singh and Priyankoo Sarmah. "Effectiveness of Using Language Independent Transcribers for Spoken Language Identification for Different Indian Languages". *International Journal of Asian Language Processing: COLIPS*. (2018).
11. Veikho, Sahiini Lemaina, and Priyankoo Sarmah. "Vowels and tones in Poula." *Linguistics of the Tibeto-Burman Area* 41, no. 1 (2018): 22-44.
12. Sarma, Biswajit D., SR Mahadeva Prasanna, and Priyankoo Sarmah. "Consonant-vowel unit recognition using dominant aperiodic and transition region detection." *Speech Communication* 92 (2017): 77-89.
13. Horo, Luke, and Priyankoo Sarmah. "Acoustic analysis of vowels in Assam Sora." *North East Indian Linguistics* 7 (2015): 69-88.
14. Sarmah, Priyankoo, Leena Dihingia, and Dimple Choudhury. "An acoustic study of Bodo vowels." *Himalayan Linguistics* 14, no. 1 (2015).
15. Sarmah, Priyankoo, Caroline R. Wiltshire, and Seung-ah Hong. "Tiwa tones in monosyllables." *North East Indian Linguistics* 5 (2013): 249-270.
16. Priyankoo Sarmah, Caroline R Wiltshire. (2010). An acoustic study of Dimasa tones. *North East Indian Linguistics*. Cambridge University Press
17. Priyankoo Sarmah, Divya Verma Gogoi, Caroline R Wiltshire. (2009). Thai English: rhythm and vowels. *English World-Wide*. John Benjamins Publishing Company.

■ PEER-REVIEWED CONFERENCE PROCEEDINGS AND PREPRINTS

1. Tzudir, Moakala, Shikha Baghel, Priyankoo Sarmah & SRM Prasanna. 2022b. Analyzing RMFCC feature for dialect identification in ao, an under-resourced language. In 2022 national conference on communications (NCC), 308–313. IEEE.
2. Tzudir, Moakala, Mrinmoy Bhattacharjee, Priyankoo Sarmah & SRM Prasanna. 2022c. Low-resource dialect identification in ao using noise robust mean hilbert envelope coefficients. In 2022 national conference on communications (NCC), 256–261. IEEE.
3. Tzudir, Moakala, Priyankoo Sarmah & SR Mahadeva Prasanna. 2022d. Prosodic information in dialect identification of a tonal language: The case of ao. *Proc. Interspeech 2022* 2238–2242.

4. Chakraborty, Joyshree, Rohit Sinha & Priyankoo Sarmah. 2022. “Influence of accented speech in automatic speech recognition: A case study on Assamese L-1 speakers speaking code switched Hindi-English”. *Speech and computer: Proceedings of 24th international conference, Specom 2022*: 87–98. Springer International Publishing Cham.
5. Gogoi, Parismita, Priyankoo Sarmah & SRM Prasanna. 2022. “Automatic rhythm and speech rate analysis of Mising spontaneous speech”. *Speech and computer: Proceedings of 24th international conference, Specom 2022*: 87–98. Springer International Publishing Cham.
6. Lokhandwala, Seema, Priyankoo Sarmah & Rohit Sinha. 2022. Classifying mahout and social interactions of Asian elephants based on trumpet calls. *Speech and computer: Proceedings of 24th international conference, Specom 2022*: 87–98. Springer International Publishing Cham.
7. Pathak, Dhruvajyoti, Sukumar Nandi & Priyankoo Sarmah. 2022a. ASNER—annotated dataset and baseline for Assamese named entity recognition. arXiv preprint arXiv:2207.03422 .
8. Pathak, Dhruvajyoti, Sukumar Nandi & Priyankoo Sarmah. 2022b. ASPOS: Assamese part of speech tagger using deep learning approach. 2022 IEEE/ACS 19th international conference on computer systems and applications (AICCSA), 1–8. IEEE.
9. Pathak, Dhruvajyoti, Sukumar Nandi & Priyankoo Sarmah. 2022c. Reduplication in assamese: Identification and modeling. *Transactions on Asian and Low-Resource Language Information Processing* 21(5). 1–18.
10. Phukon, Bornali, Anasua Mitra, Ranbir Sanasam & Priyankoo Sarmah. 2022. Team: A multi-task learning based taxonomy expansion approach for attach and merge. In *Findings of the association for computational linguistics: NAACL 2022*, 366–378.
11. Terhijja, V, & Sarmah, P. (2021). Aspiration in voiceless nasals in Angami. *Proceedings of Meetings on Acoustics*, 42(1), 060003.
12. Wiltshire, C., & Sarmah, P. (2021). Voicing contrasts in the stops of Indian English produced by Assamese speakers. *Proceedings of Meetings on Acoustics*, 42(1), 060008.
13. Chakraborty, J., Sarmah, P., & Vijaya, S. (2020). Spoken Language Identification of Four Tibeto-Burman languages. In *2020 23rd Conference of the Oriental COCOSDA International Committee for the Coordination and Standardisation of Speech Databases and Assessment Techniques (O-COCOSDA)* (pp. 106-110).
14. Das, R., Dey, A., Lalhminghlu, W., Sarmah, P., Vijaya, S., & Sinha, R. (2020). Mizo Spoken Query System Enhanced with Prosodic Information. In *2020 23rd Conference of the Oriental COCOSDA International Committee for the Coordination and Standardisation of Speech Databases and Assessment Techniques (O-COCOSDA)* (pp. 83-88).
15. Dihingia, L., & Sarmah, P. (2020). Rhythm and speaking rate in Assamese varieties. In *Proc. 10th International Conference on Speech Prosody 2020* (pp. 561-565).
16. Gogoi, P., Dey, A., Lalhminghlu, W., Sarmah, P., & Prasanna, S. (2020). Lexical Tone Recognition in Mizo using Acoustic-Prosodic Features. In *Proceedings of The 12th Language Resources and Evaluation Conference* (pp. 6458-6461).

17. Gogoi, P., Tzudir, M., **Sarmah, P.**, & Prasanna, S. (2020). Automatic Tone Recognition of Ao Language. In *Proc. 10th International Conference on Speech Prosody 2020* (pp. 1005-1008).
18. Horo, L., & **Sarmah, P.** (2020). Rhythm in Sora Trilingual Readers. In *Proc. 10th International Conference on Speech Prosody 2020* (pp. 581-585).
19. Lalhminghlui, W., & **Sarmah, P.** (2020). Interaction of Tone and Voicing in Mizo. *Proc. Interspeech 2020*, (pp. 1903-1907).
20. Deka, A., **Sarmah, P.**, Samudravijaya, K., & Prasanna, S. (2019). Development of assamese text-to-speech system using deep neural network. In *2019 National Conference on Communications (NCC)* (pp. 1-5).
21. Lalhminghlui, W., Terhijja, V., & **Sarmah, P.** (2019). Vowel-Tone Interaction in Two Tibeto-Burman Languages.. In *INTERSPEECH* (pp. 3970-3974).
22. Rabha, S., **Sarmah, P.**, & Prasanna, S. (2019). Acoustic Correlates of Aspiration in Fricatives and Nasals. In *TENCON 2019-2019 IEEE Region 10 Conference (TENCON)* (pp. 986-990).
23. Chakraborty, K., Devi, S., Devnath, S., Prasanna, S., & **Sarmah, P.** (2018). Glotto Vibrato Graph: A Device and Method for Recording, Analysis and Visualization of Glottal Activity.. In *INTERSPEECH* (pp. 2392-2393).
24. Chakraborty, K., Horo, L., & **Sarmah, P.** (2018). Building an Automatic Speech Recognition System in Sora Language Using Data Collected for Acoustic Phonetic Studies. In *SLTU* (pp. 239-242).
25. Deka, B., Chakraborty, J., Dey, A., Nath, S., **Sarmah, P.**, Nirmala, S., & Vijaya, S. (2018). Speech corpora of under resourced languages of north-east India. In *2018 Oriental COCODA-International Conference on Speech Database and Assessments* (pp. 72-77).
26. Dey, A., Deka, A., Imani, S., Deka, B., Sinha, R., Prasanna, S., **Sarmah, P.**, Samudravijaya, K., & Nirmala, S. (2018). AGROASSAM: A Web Based Assamese Speech Recognition Application for Retrieving Agricultural Commodity Price and Weather Information.. In *INTERSPEECH* (pp. 3214-3215).
27. Dey, A., Sarma, B., Lalhminghlui, W., Ngente, L., Gogoi, P., **Sarmah, P.**, Prasanna, S., Sinha, R., & Nirmala, S. (2018). Robust Mizo Continuous Speech Recognition.. In *INTERSPEECH* (pp. 1036-1040).
28. Gogoi, P., Kalita, S., Gogoi, P., Wayland, R., **Sarmah, P.**, & Prasanna, S. (2018). Analysis of Breathiness in Contextual Vowel of Voiceless Nasals in Mizo.. In *INTERSPEECH* (pp. 237-241).
29. Kothapalli, V., Sarma, B., Dey, A., Gogoi, P., Lalhminghlui, W., **Sarmah, P.**, Prasanna, S., Nirmala, S., & Sinha, R. (2018). Robust Recognition of Tone Specified Mizo Digits Using CNN-LSTM and Nonlinear Spectral Resolution. In *2018 15th IEEE India Council International Conference (INDICON)* (pp. 1-5).
30. Lalhminghlui, W., & **Sarmah, P.** (2018). Production and perception of rising tone sandhi in Mizo. *Proceedings of Tonal Aspects of Languages*.

31. Sarma, B., Dey, A., Lalhminghlu, W., Gogoi, P., **Sarmah, P.**, & Prasanna, S. (2018). Robust Mizo digit recognition using data augmentation and tonal information. In *Proc. 9th International Conference on Speech Prosody* (pp. 621-625).
32. Tzudir, M., **Sarmah, P.**, & Prasanna, S. (2018). Dialect Identification Using Tonal and Spectral Features in Two Dialects of Ao.. In *SLTU* (pp. 137-141).
33. Dey, A., Lalhminghlu, W., **Sarmah, P.**, Samudravijaya, K., Prasanna, S., Sinha, R., & Nirmala, S. (2017). Mizo phone recognition system. In *2017 14th IEEE India Council International Conference (INDICON)* (pp. 1-5).
34. Dutta, I., Irfan, S., Gogoi, P., & **Sarmah, P.** (2017). Nature of Contrast and Coarticulation: Evidence from Mizo Tones and Assamese Vowel Harmony. In *INTERSPEECH* (pp. 224-228).
35. Kalita, S., Lalhminghlu, W., Horo, L., **Sarmah, P.**, Prasanna, S., & Dandapat, S. (2017). Acoustic Characterization of Word-Final Glottal Stops in Mizo and Assam Sora.. In *INTERSPEECH* (pp. 1039-1043).
36. Lalhminghlu, W., Das, R., **Sarmah, P.**, & Vijaya, S. (2017). A Mizo speech database for automatic speech recognition. In *International conference on speech database and assessments (Oriental COCOSDA)*.
37. Rabha, S., Mazumdar, P., **Sarmah, P.**, & Prasanna, S. (2017). Detection of aspiration in Rabha alveolar fricatives using Zero Frequency Filtering. In *TENCON 2017-2017 IEEE Region 10 Conference* (pp. 2478-2482).
38. Tzudir, M., **Sarmah, P.**, & Prasanna, S. (2017). Tonal feature based dialect discrimination in two dialects in Ao. In *TENCON 2017-2017 IEEE Region 10 Conference* (pp. 1795-1799).
39. Kalita, S., Horo, L., **Sarmah, P.**, Prasanna, S., & Dandapat, S. (2016). Analysis of Glottal Stop in Assam Sora Language. In *INTERSPEECH* (pp. 1049-1053).
40. Mahanta, D., Sharma, B., **Sarmah, P.**, & Prasanna, S. (2016). Text to speech synthesis system in Indian English. In *2016 IEEE Region 10 Conference (TENCON)* (pp. 2614-2618).
41. **Sarmah, P.**, Sarma, B., Adiga, N., Gogoi, P., & Prasanna, S. (2016). Dual channel signal analysis of oral and nasal consonants. In *2016 IEEE Region 10 Conference (TENCON)* (pp. 988-992).
42. Biswajit Dev Sarma, Priyankoo Sarmah, Wendy Lalhminghlu, SR Mahadeva Prasanna. 2015. **Detection of Mizo Tones**. *Interspeech 2015*. ISCA

■ SPONSORED AND CONSULTANCY PROJECTS

Duration	Title of the Project	Funding Agency
2022 – present	Speech Technologies for North Eastern Languages	MeITY, Govt. of India
2021 – present	Digital Language Typology	Team TFK, Finland
2017-2019	Sociolinguistic Study of Phonetic Variations among the Clans and Khels of Two Southern Angami Villages	ICSSR, Govt. of India

2017-2018	Testing and Refinement of RATS system for Manipuri and Nagamese Languages	TATA Power SED
2015-2016	Local Language Interface Development and Pronunciation Dictionary for Hindi and English (LLIPD) System	Speechwarenet Pvt Ltd
2014-2016	A Broad Sociolinguistic Study of Assamese Vowels	ICSSR, Govt. of India
2013-2017	Acoustic and Tonal Features based Analysis of Mizo	DeITy, Govt. of India
2012-2014	Vowels, Tones and Rhythm in Rabha	IITG Start-up Grant

■ CONFERENCES & SHORT TERM COURSES ORGANIZED

Year	Details
2019	Organizer, Workshop on Spoken Language and Speech Analysis, Nagaland University, Kohima
2019	Organizer, School on Automatic Speech Recognition at CLST, IIT Guwahati
2018	Organizer, The 13th Winter School on Speech and Audio Processing, IIT Guwahati
2018	Organizing Committee, Interspeech 2018, Hyderabad
2017	Organizer, School on Automatic Speech Recognition at CLST (Summer and Winter), IIT Guwahati
2016	Organizer, The 22nd Himalayan Languages Symposium, IIT Guwahati
2016	Organizer, the 38th International Conference of the Linguistic Society of India

■ IMPORTANT CONFERENCES ATTENDED

Year	Event/ Organization	Role
2021	Indira Gandhi National Centre for the Arts, Kala Nidhi Division, New Delhi	Panel Discussion
2020	CoRSAL 4th Annual Meeting, University of North Texas (virtual)	Panel Discussion
2020	The 23rd Conference of the Oriental COCOSDA International Committee for the Co-ordination and Standardisation of Speech Paper and Session Chair Databases and Assessment Techniques	
2019	The Symposium for Indian Languages Technology Industry, FICCI-ILIA, New Delhi	Moderator
2019	Language Technology for All (LT4All), UNESCO, Paris	Panel Discussion

2019	Interspeech 2019, Graz, Austria	Paper presentation
2018	Interspeech 2018, Hyderabad India	Paper presentation
2018	Oriental COCOSDA, Miyazaki, Japan	Paper presentation
2018	Speech Prosody, Poznan, Poland	Paper presentation
2018	Tonal Aspect of Languages, Berlin, Germany	Paper presentation
2017	Interspeech 2017, Stockholm, Sweden	Paper presentation
2016	IEEE Tenth Regional Conference (TENCON), Singapore	Paper and Session Chair
2015	Interspeech 2015, Dresden, Germany	Paper presentation

■ COURSES TAUGHT (2011-2023)

Sl no.	Name of Course	Undergraduate/ Postgraduate	Instruction Type	Number of times taught
1	Introduction to Phonetics	UG	Single Instruction	8
2	Preparatory English	UG	Single/Joint	3
3	Writing Systems of the World	UG	Single Instruction	10
4	Language Issues in Globalization	PG	Single Instruction	1
5	Introduction to Language Science	PG	Single/Shared Instruction	4
6	Phonetics and Speech Signal Processing	PG	Shared Instruction	4
8	Experimental Phonology	PG	Single Instruction	2
9	Issues in Tone Languages	PG	Single Instruction	5
10	Acoustic Analysis of Tone Languages	PG	Single Instruction	2

■ ADMINISTRATIVE RESPONSIBILITIES (2011-2021)

Institute level

Sl No	Details
2018-2021	Department Representative, High Performance Computing Committee
2020-2021	Centre Representative (CLST), Institute Research and Development Committee
2014-2017	National Coordinator, Ishan Vikas Programme
2015-2017	TIC Review Committee

2015-2016 Hostel Services Committee
2014-2016 Associate Warden, Brahmaputra hostel
2012-2013 Editorial committee, Alumni Newsletter

Departmental

2014-2020 Space & Infrastructure Advisory Committee
2014-2020 Purchase committee
2016-2020 Webpage Committee
2014-2016 Resources and Maintenance Committee
2015 Faculty Adviser, Graduate Research Meet 2015
2014 Faculty Adviser, Graduate Research Meet 2014
2012-2014 New building advisory committee
2012-2014 Computer and Related Equipment Committee
2020-2021 Centre Postgraduate Programme Committee, Centre for Linguistic Science and Technology, IIT Guwahati

■ PROFESSIONAL ACTIVITIES (2011-2021)

1. 2022: **Area Chair** of Phonetics, Phonology and Prosody, Interspeech 2022, Seoul , South Korea
2. 2016-2021: **Member**, Editorial Committee for Assamese, The Bharatvani Project, Central Institute of Indian Languages, Mysore, Karnataka.
3. 2021: **Program Committee Member**, Oriental COCOSDA 2021 : The 24th Conference of the Oriental COCOSDA International Committee for the Co-ordination and Standardisation of Speech Databases and Assessment Techniques, Singapore.
4. 2021: **Area Chair** of Phonetics, Phonology and Prosody, Interspeech 2021, Brno, Czech Republic.
5. 2020: **Program Committee Member**, Oriental COCOSDA 2020 : The 23rd Conference of the Oriental COCOSDA International Committee for the Co-ordination and Standardisation of Speech Databases and Assessment Techniques, Yangon, Myanmar.
6. 2018: **Area Chair** of Phonetics, Phonology and Prosody, Interspeech 2018, Hyderabad, India.

■ PROFESSIONAL MEMBERSHIPS

1. Life Member, Linguistic Society of India
2. Member, Association for Laboratory Phonology
3. Member, International Speech Communication Association
4. Member, International Phonetic Association
5. Member, Acoustical Society of America
6. Member, IEEE.

■ DETAILS OF PHD SUPERVISION

	Name of Student	Thesis Topic	Status	Supervision
1	Luke Horo	A Phonetic Description of Assam Sora	Awarded	Single
2	Leena Dihingia	Vowel Acoustics of Assamese Spoken in Five Geographical Locations	Awarded	Single
3	Wendy Lalhminghlui	Phonetics and Phonology of Tones in Mizo	Awarded	Single
4	Saswati Rabha	Analysis & Automatic Detection of Aspirated Fricative & Aspirated Nasals	Awarded	Joint
5	Moakala Tzudir	Automatic Dialect Identification in Ao, a Low Resource Language	Awarded	Joint