

# Dr. Shikha Baghel

Assistant Professor  
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## Research Interests

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Speech and Signal processing, Speaker and Language Diarization, Overlapped Speech Detection, Dialect Identification, Speech Type Classification, Deep Learning and Machine Learning

## Education

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### Ph.D. (Signal Processing) (2022)

Indian Institute of Technology Guwahati

### M. Tech. (Wireless Communication and Computing) (2015)

Indian Institute of Information Technology Allahabad

### B. Tech. (Electronics and Communication Engineering) (2012)

Uttar Pradesh Technical University, Lucknow

## Experience

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### • Postdoctoral Researcher, EE Department, IISc Bengaluru Aug. 2022-Nov. 2023

Involved in a project *Speech Technologies in Indian Languages* under the project titled National Language Translation Mission (NLTM): Bhashini, the Ministry of Electronics and Information Technology (MeitY), Government of India. The goal of this project is to build an automatic speaker diarization systems in code-mixed and multi-speaker conversational environment.

### • Assistant Professor, ECE Department, NITK Surathkal Dec. 2023-Present

## Peer Review

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- IEEE/ACM Transactions on Audio, Speech, and Language Processing (TASLP)
- Speech Communication, Elsevier
- Computer Speech & Language, Elsevier
- INTERSPEECH Conference
- International Conference on Speech and Computer (SPECOM)
- National Conference on Communications (NCC)

## Societal Membership

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- IEEE Member
- IEEE Signal Processing Society Member
- International Speech Communication Association (ISCA) member

## Professional Activities

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- Delivered an invited talk on **Analysis of Conversational Speech** at **IIT Guwahati**, July 2023.
- Organizer, **DISPLACE Challenge**, a part of **INTERSPEECH-2023**.
- Delivered a Guest lecture on **Classification Problems using Python** at **IIIT Naya Raipur**.
- Student volunteer, **INTERSPEECH**, Hyderabad, India, 2 – 6 September 2018
- Student Organizer, **Speech Enhancement for Hearing Aids**, GIAN Course, IIT Guwahati, 23-27 January, 2018
- Student Organizer, **Empirical Mode Decomposition and its Applications**, GIAN Course, IIT Guwahati, 23-27 Oct., 2017
- Lab Representative, RSF-EEE, IIT Guwahati, 2017-18

- Volunteer, Latex workshop, RSF-EEE, IIT Guwahati, 9 September, 2017
- Student volunteer, **Indian Conference on Computer Vision, Graphics and Image Processing**, IIT Guwahati, 18-22 December, 2016
- Student member of publicity committee, **International conference on wireless communication and sensor networks**, IIIT-A, 16-19 December, 2013
- Workshop coordinator, **RoboTryst-2012**, a national level robotics championship (in association with IIT-Kharagpur)

## Awards and Fellowships

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- 2015-2020: MHRD Fellowship (during Ph.D.) by Government of India
- 2013-2015: MHRD Fellowship (during M. Tech.) by Government of India
- 2009-2010: Scholarship based on academic performance (B. Tech. Second year) by GLNAIT-Mathura
- 2008-2009: Scholarship based on academic performance (B. Tech. First year) by GLNAIT-Mathura

## Publications

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### • Journals

1. **S. Baghel**, S. R. M. Prasanna, and P. Guha, “Exploration of Excitation Source Information for Shouted and Normal Speech Classification”, *The Journal of the Acoustical Society of America (JASA)*, vol. 147, no. 2, pp. 1250-1261, 2020.
2. **S. Baghel**, S. R. M. Prasanna, and P. Guha, “Overlapped speech detection using phase features”, *The Journal of the Acoustical Society of America (JASA)*, vol. 150, no. 4, pp. 2770-2781, 2021.
3. M. Tzudir, **S. Baghel**, P. Sarmah, and S. R. M. Prasanna, “Exploration of an Under-Resourced Dialect Identification in Ao using Source Information”, *The Journal of the Acoustical Society of America (JASA)*, vol. 152, no. 3, pp. 1755–1766, 2022.

### • Conferences

1. M. Bhattacharjee, **S. Baghel**, S. R. M. Prasanna, “Driver Speech Detection in Real Driving Scenario”, in Proc. *International Conference on Speech and Computer (SPECOM)*, Nov. 2023.
2. **S. Baghel**, S. Ramoji, Sidharth, Ranjana H, P. Singh, S. Jain, P. Roy Chowdhuri, K. Kulkarni, S. Padhi, D. Vijayasenana, S. Ganapathy, “DISPLACE Challenge: Dlarization of SPeaker and LAnguage in Conversational Environments”, *INTERSPEECH*, Aug. 2023, pp. 3562–3566.
3. **S. Baghel**, S. R. M. Prasanna, and P. Guha, “Overlapped Speech Detection Using AM-FM based Representations”, in Proc. *International Conference on Speech and Computer (SPECOM)*, Nov. 2022, pp. 33–43.
4. M. Tzudir, **S. Baghel**, P. Sarmah, and S. R. M. Prasanna, “Analyzing RMFCC Feature for Dialect Identification in Ao, an Under-Resourced Language”, in Proc. *National Conference on Communications (NCC)*, May 2022, pp. 308–313.
5. **S. Baghel**, M. Bhattacharjee, S. R. M. Prasanna and P. Guha, “Automatic Detection of Shouted Speech Segments in Indian News Debates”, in Proc. *INTERSPEECH*, Sept. 2021, pp. 4179-4183.
6. M. Tzudir, **S. Baghel**, P. Sarmah, and S. R. M. Prasanna, “Excitation Source Feature Based Dialect Identification in Ao - a Low Resource Language”, in Proc. *INTERSPEECH*, Sept. 2021, pp. 1524-1528.
7. **S. Baghel**, S. R. M. Prasanna, and P. Guha, “Effect of High-Energy Voiced Speech Segments and Speaker Gender on Shouted Speech Detection”, in Proc. *National Conference on Communications (NCC)*, IIT Kanpur and IIT Roorkee, July 2021, pp. 1-6.
8. **S. Baghel**, S. R. M. Prasanna, and P. Guha, “Overlapped/Non-Overlapped Speech Transition Point Detection Using Bag-of-Audio-Words”, in Proc. *International Conference on Signal Processing and Communications (SPCOM)*, IISc-Bengaluru, India, July 2020, pp. 1-5.
9. **S. Baghel**, S. R. M. Prasanna, and P. Guha, “Analysis of Excitation Source Characteristics for Shouted and Normal Speech Classification”, in Proc. *National Conference on Communications (NCC)*, IIT-Kharagpur, India, Feb 2020, pp. 1-6.
10. **S. Baghel**, M. Bhattacharjee, S. R. M. Prasanna and P. Guha, “Shouted and Normal Speech Classification using 1D CNN”, in Proc. *Pattern Recognition and Machine Intelligence (PREMI)*, Tezpur University, India, Dec 2019, pp. 472-480.
11. **S. Baghel**, S. R. M. Prasanna and P. Guha, “Excitation Source Feature for Discriminating Shouted and Normal Speech”, in Proc. *International Conference on Signal Processing and Communications (SPCOM)*, IISc-Bengaluru, India, July 2018, pp. 167-171.

12. **S. Baghel**, S. R. M. Prasanna and P. Guha, "Classification of Multi Speaker Shouted Speech and Single Speaker Normal Speech", in Proc. *IEEE Region 10 Conference, (TENCON)*, Penang, Malaysia, Nov. 2017, pp. 2388-2392.
13. **S. Baghel**, B. K. Khonglah, S. R. M. Prasanna and P. Guha, "Shouted / Normal Speech Classification using Speech-Specific Features", in Proc. *IEEE Region 10 Conference, (TENCON)*, Singapore, Nov. 2016, pp. 1655-1659.

## Public Profiles

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- [Research Gate: Click Here](#)