

Shree Harsha Bokkahalli Satish

PhD Student in Speech Technology and Conversational AI

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Research Profile

Doctoral student at KTH Royal Institute of Technology, specialising in speech technology and conversational AI. Current research focus on distributional evaluation methods for full-duplex dialogue and examining how conversational behaviours and socially meaningful vocal cues affect the performance, robustness, and fairness of speech foundation models.

Education

KTH Royal Institute of Technology <i>PhD in speech technology and conversational AI</i> Doctoral student in the Wallenberg AI, Autonomous Systems and Software Program (WASP)	2025–2029 (expected)
University of Liverpool <i>MSc Data Science and Artificial Intelligence, Distinction</i> Year in industry developing LLM/RAG systems for aerospace engineering workflows.	2022–2024
Indian Institute of Technology Bombay <i>MTech Electrical Engineering (Signal Processing), GPA: 8.18/10</i> TATA Fellow; research in speech technology for social impact.	2018–2021
Sri Jayachamarajendra College of Engineering, Mysuru <i>BE Electronics and Communication Engineering, GPA: 8.5/10</i> Graduate Aptitude Test in Engineering rank: 749 nationally (approximately 99th percentile).	2014–2018

Research and Professional Experience

Doctoral Researcher <i>KTH Royal Institute of Technology, Department of Speech, Music and Hearing (TMH)</i>	Mar 2025–Present <i>Stockholm, Sweden</i>
- Develop human-reference, distributional metrics for comparing human–human, human–AI, and AI–AI conversations, with emphasis on turn-taking, responsiveness, entrainment, affect, and participant-level outcomes. - Design controlled evaluations of SpeechLLMs across accent, gender presentation, phonation, speech continuation, positional bias, benchmark format, and open-ended generation. - Study audio deepfake detection under speech restoration and voice-quality conversion, analysing distribution shifts and robustness to benign transformations. - Build judge-based evaluation and reward-modelling pipelines for conversational timing and interactional competence.	
Innovation Engineer, Year in Industry <i>ALTEN Ltd.</i>	Aug 2023–Sep 2024 <i>Derby, UK</i>
- Built a multi-agent retrieval-augmented generation system for aerospace repair-scheme creation; internal evaluation indicated a 98% reduction in engineering workflow time. - Delivered a near-production prototype through iterative development and continuous feedback from engineering stakeholders.	
Postgraduate Research Assistant and TATA Fellow <i>Digital Audio Processing Lab, IIT Bombay</i>	Jun 2018–Aug 2021 <i>Mumbai, India</i>
- Developed ASR and automated literacy-assessment systems for children’s oral reading; a partner NGO deployed the resulting system in field programmes. - Improved robustness under challenging field conditions using acoustic modelling, data augmentation, transfer learning, and voice activity detection.	

Skills

Methods: Speech foundation models, SpeechLLMs, speech continuation, full-duplex dialogue, distributional evaluation, audio deepfake detection, self-supervised speech representations, ASR, bias and fairness evaluation, reward modelling.

Tools: Python, PyTorch, scikit-learn, MATLAB, Bash, Kaldi, and LLM/RAG systems.

Peer-Reviewed Publications

- [1] **The Voice Behind the Words: Quantifying Intersectional Bias in SpeechLLMs**
Shree Harsha Bokkalahalli Satish, Christoph Minixhofer, Maria Teleki, James Caverlee, Ondřej Klejch, Peter Bell, Gustav Eje Henter, and Éva Székely
Proceedings of Interspeech 2026 (accepted)
- [2] **Lost in Phonation: Voice Quality Variation as an Evaluation Dimension for Speech Foundation Models**
Harm Lameris, **Shree Harsha Bokkalahalli Satish**, Joakim Gustafson, and Éva Székely
Proceedings of Interspeech 2026 (accepted)
- [3] **From Seeing it to Experiencing it: Interactive Evaluation of Intersectional Voice Bias in Human-AI Speech Interaction**
Shree Harsha Bokkalahalli Satish, Maria Teleki, Christoph Minixhofer, Ondrej Klejch, Peter Bell, and Éva Székely
CHI 2026 Extended Abstracts
- [4] **“Walk a Mile in My Voice”: Voice Conversion Shapes Trust, Attribution, and Empathy in Human-AI Speech Interactions**
Shree Harsha Bokkalahalli Satish, Maria Teleki, Christoph Minixhofer, Ondrej Klejch, Peter Bell, and Éva Székely
IUI 2026 Companion, pp. 126–130
- [5] **Do Bias Benchmarks Generalise? Evidence from Voice-based Evaluation of Gender Bias in SpeechLLMs**
Shree Harsha Bokkalahalli Satish, Gustav Eje Henter, and Éva Székely
IEEE ICASSP 2026 (accepted)
- [6] **Speak Your Mind: The Speech Continuation Task as a Probe of Voice-Based Model Bias**
Shree Harsha Bokkalahalli Satish, Harm Lameris, Olivier Perrotin, Gustav Eje Henter, and Éva Székely
Identity-Aware AI Workshop at LREC 2026
- [7] **When Voice Matters: Evidence of Gender Disparity in Positional Bias of SpeechLLMs**
Shree Harsha Bokkalahalli Satish, Gustav Eje Henter, and Éva Székely
Speech and Computer (SPECOM 2025), pp. 25–38
- [8] **Hear Me Out: Interactive Evaluation and Bias Discovery Platform for Speech-to-Speech Conversational AI**
Shree Harsha Bokkalahalli Satish, Gustav Eje Henter, and Éva Székely
Proceedings of Interspeech 2025, pp. 2151–2152

Preprints and Accepted Presentations

- [P1] **What Counts as Real? Speech Restoration and Voice Quality Conversion Pose New Challenges to Deepfake Detection**
Shree Harsha Bokkalahalli Satish, Harm Lameris, Joakim Gustafson, and Éva Székely
Accepted for presentation at the International Symposium on Synthetic Media Attribution and Detection (ISSMAD 2026); arXiv:2603.14033
- [P2] **Predicting Lexical Skills from Oral Reading with Acoustic Measures**
Charvi Vitthal*, **Shreeharsha B. S***, Kamini Sabu, and Preeti Rao
arXiv:2112.00635, 2021

*Equal contribution.

Selected Awards and Achievements

- Invited participant to the 2026 JSALT workshop at the Johns Hopkins university, working on simulation and evaluation for full-duplex conversational models.
- EnAppSys/Montel Datathon: 2nd place on the public leaderboard and 3rd on the private leaderboard for energy forecasting.
- IIT Madras English/Hindi ASR Challenge: 2nd place in the closed task.
- Interspeech 2020 Shared Task on ASR: 9th place in the closed task; achieved an 8.5% relative WER improvement using wavelet based data augmentation.