

Shree Harsha Satish

+44 776-799-3927 | shreeharshabs@protonmail.com | [LinkedIn: Shree Harsha Satish](#)

EDUCATION

University of Liverpool <i>Master of Science in Data Science and Artificial Intelligence</i>	Liverpool, UK <i>Graduation: 2024</i>
Indian Institute of Technology Bombay (IIT Bombay) <i>Master of Technology in Electrical Engineering</i>	Mumbai, India <i>Graduation: 2021</i>
Sri Jayachamarajendra College of Engineering (SJCE) <i>Bachelor of Engineering in Electronics & Communication</i>	Mysuru, India <i>Graduation: 2018</i>

EXPERIENCE

Innovation Engineer (Year in Industry) <i>ALTEN Ltd.</i>	2023 – 2024 <i>Derby, UK</i>
Postgraduate Research Assistant (TATA Fellow) <i>Digital Audio Processing (DAP) Lab, IIT Bombay</i>	2018 – 2021 <i>Mumbai, India</i>
<ul style="list-style-type: none">• Worked on various aspects of an automated literacy assessment system for children; chiefly building acoustic models for speech recognition in reading miscue detection through transfer learning• Participated in a customer discovery/startup incubation program for the speech assessment system which is now in field use by an NGO• Other responsibilities: Collecting speech data by conducting recording sessions in various schools, building voice activity detectors and other supporting systems for speech assessment	

ACHIEVEMENTS & PATENTS/PUBLICATIONS

TATA Fellow during Master of Technology program at IIT Bombay	2018 – 2021
Indian patent filed on an automatic assessment system	2019
<ul style="list-style-type: none">• P. Rao, K. Sabu, N. Nayak and B.S. Shreeharsha, "System for Automatic Assessment of Fluency in Spoken Language and A Method Thereof", Indian Patent Application No. 201921041761 dated October 15, 2019.	
Ranked 749th (99th percentile) in a national engineering test	2018
<ul style="list-style-type: none">• Out of 126,000 electronics and communication engineering graduates taking the Graduate Aptitude Test in Engineering (GATE) across India	
Preliminary classification of recordings into fluency categories using acoustic features	2021
<ul style="list-style-type: none">• Shreeharsha B.S., Charvi Vitthal, Kamini Sabu, and Preeti Rao. "Predicting lexical skills from oral reading with acoustic measures" arXiv preprint arXiv:2112.00635	
Using blind source separation and wavelets for photoplethysmography	2018
<ul style="list-style-type: none">• B. A. Sujathakumari, B. S. Shreeharsha, P. Verma, S. Shivram and A. R. Raksha, "Heart Rate Measurement using Face Video with Noise Suppression," 2018 4th International Conference for Convergence in Technology (I2CT), 2018, pp. 1-7, doi: 10.1109/I2CT42659.2018.9058066.	
Submissions to Competitions	
<ul style="list-style-type: none">• 2020 Interspeech Shared Task on Automatic Speech Recognition<ul style="list-style-type: none">* Came up with new augmentation strategies for Non-Native Children's Speech recognition* Ranked 9th place in the closed task which was an improvement of 8.5% in Word Error Rate (WER) over the baseline system using a unique wavelet/VAD based data augmentation technique• 2023 Datathon conducted by DSAI society and EnAppSys (part of Montel Group)<ul style="list-style-type: none">* Ranked 2nd place on the public leaderboard and 3rd place on the private leaderboard	

PROJECTS

- Intelligent species monitoring with the Sony Spresense Micro-controller** | *Python, EdgeImpulse* 2023
- Submission to the Tiny Machine Learning on Sony Spresense challenge
 - The micro-controller was programmed to use tiny ML algorithms to identify invasive species of plants through a camera and monitor animal sounds through a mic
- Acoustic models for speech recognition in children's reading miscue detection** | *Kaldi, Python* 2021
- Examined transfer learning and data augmentation techniques to build acoustic models for literacy assessment
 - Obtained significant improvements in word error rates (WER) and reading accuracy metrics over a baseline
 - Novel use of the chunk-width parameter to 'clean' the retraining data for a general transfer learning purpose by reducing the effect of text contexts surrounding a word
- Keyword Spotting using Wavelet MFCCs** | *PyTorch, Python* 2019
- Performed keyword spotting using MFCC features computed on detail and approximate wavelet versions of the audio, compared it with conventional MFCCs
 - Obtained improvements in precision and recall of the spoken key words
- Adaptive reconstruction filter-banks using autoencoders** | *PyTorch, Python* 2019
- Examining the interpretability of the layers of a fully connected and convolutional autoencoder and its relationship with orthogonal filter-banks

SKILLS

Programming and Tools: Python, Bash, MATLAB, Kaldi and Git

ADDITIONAL INFORMATION

- As a TATA fellow, I had the opportunity to understand technology and its role at the bottom of the economic pyramid. I traveled to many parts of India to understand how Social Entrepreneurship works through actual examples by participating in the **I-NCUBATE program** from IIT Madras.