Shreeharsha B S

shreeharshabs@protonmail.com +44 7767993927

MSc student in Data Science and Artificial Intelligence at the University of Liverpool (2022-2024)

EDUCATION

M.Tech (Master of Technology) in Communication & Signal Processing — **Mumbai, Maharashtra**
Indian Institute of Technology Bombay (IIT Bombay) — *Graduation: 2021*
CPI: 8.18/10

B.E (Bachelor of Engineering) in Electronics & Communication — **Mysuru, Karnataka**
Sri Jayachamarajendra College of Engineering — *Graduation: 2018*
CGPA: 8.50/10

AREAS OF INTEREST

Machine learning, Data Science, Artificial Intelligence, Signal Processing

SELECTED PROJECTS (clickable)

Acoustic models for speech recognition in children's reading miscue detection *(Master's Thesis)* *2020 - 2021*

- Examined transfer learning and data augmentation techniques to build acoustic models for literacy assessment (in field use by an NGO); obtained improvements in WER% and reading accuracy metrics over a baseline system
- Novel use of the chunk-width parameter to 'clean' (reduce the effect of text contexts within) the retraining data for a general transfer learning purpose

Keyword spotting using wavelet MFCCs *2019*

- Performing keyword spotting using MFCCs computed on detail and approximate wavelet versions of the audio, compared it with conventional MFCCs and delta, delta-delta coefficients

Adaptive reconstruction filter-banks using autoencoders *2019*

- Examining the interpretability of the layers of a fully connected and convolutional autoencoder and its relationship with orthogonal filter-banks

ACHIEVEMENTS & PUBLICATIONS/PATENTS

Fellowship during Master of Technology program *2018 - 2021*

- Fellowship from the Tata Centre for Technology and Design (TCTD) during master's program at IIT Bombay

Preliminary classification of recordings into fluency categories using acoustic features *2021*

- **Shreeharsha B.S.**, Charvi Vitthal, Kamini Sabu, and Preeti Rao. "Predicting lexical skills from oral reading with acoustic measures." arXiv preprint arXiv:2112.00635 (2021).

Submission to the 2020 Interspeech Shared Task on Automatic Speech Recognition for Non-Native Children's Speech *2020*

- 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.

Indian patent filed on an automatic assessment system *2019*

- 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.

B.E. Final Project - Understanding blind source separation and wavelet denoising *2018*

- 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.

Ranked 749th (99th percentile) in a Nationwide engineering test *2018*

Out of 120,000 electronics and communication engineering graduates taking the Graduate Aptitude Test in Engineering (GATE) across India

ADDITIONAL SKILLS

- Experience with the Kaldi Toolkit, Linux systems, Matlab
- Programming Languages used primarily: Python, Bash