Shreeharsha B S

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EDUCATION

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

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

AREAS OF INTEREST

Machine learning, Automatic speech recognition, Signal processing

PROJECTS

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

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

ACHIEVEMENTS & PUBLICATIONS/PATENTS

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.

Fellowship from the Tata centre during master's program at IIT Bombay *2018 - 2021*

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).

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.

Submission to the 2020 Interspeech Shared Task on Automatic Speech Recognition for Non-Native Children's Speech *2020*
- Obtained 9th place in the closed task which was an improvement of 8.5% in WER over the baseline system using a unique wavelet/VAD based data augmentation technique.

ADDITIONAL SKILLS

- Relevant Coursework: Digital signal processing, Speech processing, Statistical signal analysis, Wavelets, Automatic speech recognition
- Experience with Kaldi Toolkit and linux systems
- Programming Languages: Python, Bash