Shree Harsha Satish

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Summary

Engineer specializing in machine learning and signal processing. Proven track record in creating impactful tools for developing innovative solutions using LLMs, renewable energy optimization and speech recognition.

Education

University of Liverpool — Liverpool, UK
Master of Science in Data Science and Artificial Intelligence — *Graduation: 2024*

Indian Institute of Technology Bombay (IIT Bombay) — Mumbai, India
Master of Technology in Electrical Engineering (Signal Processing) — *Graduation: 2021*

Sri Jayachamarajendra College of Engineering (SJCE) — Mysuru, India
Bachelor of Engineering in Electronics & Communication — *Graduation: 2018*

Experience

Innovation Engineer (Year in Industry) — 2023 – 2024
ALTEN Ltd. — *Derby, UK*

- Built a system that automatically generates repair schemes and answers questions about various engine components using Retrieval Augmented Generation (RAG) with a Large Language Model (LLM). Resulted in 98% time savings for aerospace engineers writing new repairs
- Optimizing solar panel placement on roofs, car parks and open fields using satellite imagery, LiDAR and climate data with computer vision and image segmentation models. This can help homeowners and businesses get better estimates of solar potential

Postgraduate Research Assistant (TATA Fellow) — 2018 – 2021
Digital Audio Processing (DAP) Lab, IIT Bombay — *Mumbai, India*

- Built an automated literacy assessment system for children's speech which is in field use by an NGO
- Trained acoustic speech recognition models for reading miscue detection through transfer learning. This eliminated the need for human literacy evaluators and saved thousands of man-hours

Achievements & Patents/Publications

Classification of audio 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

Ranked 749th (99th percentile) in a national engineering test — 2018

- Out of 126,000 graduates taking the Graduate Aptitude Test in Engineering (GATE) across India

Heart Rate Measurement using Face Video — 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.

Indian patent filed on automatic speech 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.

Submissions to Competitions

- 2020 Interspeech Shared Task on Automatic 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 organized by EnAppSys (part of Montel Group)
  - Ranked 2nd place on the public leaderboard and 3rd place on the private leaderboard

Skills

Python (including pytorch, scikit-learn and other machine learning libraries)

Bash, SQL, Matlab, Linux, Docker, Git, Agile Development, Azure DevOps