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## Education

- 2020–2023 : **Master, Computer Science & Engineering**, Indian Institute of Technology, Madras, **CGPA**: 9.12/10, **Advisors**: Prof S.Umesh, Prof Hema A.Murthy.  
**Research Focus**: Self-Supervised Learning, Audio Classification, Speech Recognition (ASR)
- 2016–2020 : **Bachelor of Engineering, Computer Science & Engineering**, Army Institute Of Technology, Pune, **CGPA**: 8.98/10.

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## Publications

### Journal Articles

- 2022 Sreyan Ghosh\*, **Ashish Seth\***, and S Umesh. Decorrelating feature spaces for learning general-purpose audio representations. *IEEE Journal of Selected Topics in Signal Processing (IEEE J-STSP)*, 2022.

### In Conference Proceedings

- 2024 Sreyan Ghosh\*, **Ashish Seth\***, Sonal Kumar, Utkarsh Tyagi, Chandra Kiran Reddy Evuru, S. Ramaneswaran, S Sakshi, Oriol Nieto, Ramani Duraiswami, and Dinesh Manocha. Compa: Addressing the gap in compositional reasoning in audio-language models. *Under Review in (ICLR)*, 2024.
- 2023 **Ashish Seth\***, Mayur Hemani\*, and Chirag Agarwal. Dear: Debiasing vision-language models with additive residuals. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.
- 2023 **Ashish Seth\***, Sreyan Ghosh\*, S. Umesh, and Dinesh Manocha. Slicer: Learning universal audio representations using low-resource self-supervised pre-training. In *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2023.
- 2023 Anusha Prakash, Arun Kumar, **Ashish Seth**, and et al. Technology Pipeline for Large Scale Cross-Lingual Dubbing of Lecture Videos into Multiple Indian Languages. In *(INTERSPEECH)*, 2023.
- 2023 Sreyan Ghosh\*, **Ashish Seth\***, S. Umesh, and Dinesh Manocha. Mast: Multiscale audio spectrogram transformers. In *ICASSP 2023 - 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2023.
- 2022 Anish Bhanushali, Grant Bridgman, Deekshitha G, Prasanta Ghosh, Pratik Kumar, Saurabh Kumar, Adithya Raj Kolladath, Nithya Ravi, Aaditeshwar Seth, **Ashish Seth**, and et al. Gram Vaani ASR Challenge on spontaneous telephone speech recordings in regional variations of Hindi. In *(INTERSPEECH)*, 2022.
- 2021 Mari Ganesh Kumar, Jom Kuriakose, Anand Thyagachandran, Arun Kumar A\*, **Ashish Seth\***, Lodagala V.S.V. Durga Prasad\*, Saish Jaiswal, Anusha Prakash, and Hema A. Murthy. Dual Script E2E Framework for Multilingual and Code-Switching ASR. In *(INTERSPEECH)*, 2021.

### In Workshops

- 2023 **Ashish Seth\***, Sreyan Ghosh\*, S. Umesh, and Dinesh Manocha. Unfused : Unsupervised finetuning using self supervised distillation. In *2023 workshop on Self-supervision in Audio, Speech and Beyond, (ICASSP)*, 2023.

- 2022 Sreyan Ghosh\*, **Ashish Seth\***, Deepak Mittal, Maneesh Singh, and S. Umesh. Delores: Decorrelating latent spaces for low-resource audio representation learning. In *2022 workshop on Self-supervised Learning for Audio and Speech Processing, (AAAI)*, 2022.

### Arxiv Pre-prints

- 2023 **Ashish Seth\***, Lodagala V S V Durga Prasad\*, Sreyan Ghosh\*, and S. Umesh. Analyzing the factors affecting usefulness of self-supervised pre-trained representations for speech recognition. 2023.
- 2023 Sreyan Ghosh, Sandesh V Katta, **Ashish Seth**, and Srinivasan Umesh. Deep clustering for general-purpose audio representations. 2023.

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## Professional Work Experience

### MTS (Member of Technical Staff) @ Adobe India

- 2023–present **Building API and Services for B2B marketing software.**
- Working as a software engineer in building API and Services for B2B (Business-to-Business) marketing software.
  - Led the team in building deep learning models that capture customer behaviors and recommend products by combining customer and salesperson feedback.

### Project Associate @ IIT (Indian Institute Of Technology) Madras

- 2020 – 2023 **Building state-of-the-art (SOTA) ASR and TTS models for Indian Languages.**
- Build SOTA Automatic Speech Recognition (ASR) and Text-to-Speech Models for various Indian languages
  - Presented our findings at many international conferences e.g. ICASSP, InterSpeech, AAAI, etc.
- Building end-to-end pipeline for video-to-video translation of educational lectures into regional Indian Languages.**
- Was part of the team that built tools and APIs for video-to-video translation for an e-learning platform NPTEL (National Program on Technology Enhanced Learning) from English to several regional Indian languages.
  - Led the team in building SOTA machine translation systems for various educational domains for Indian languages and collecting diverse data for building such models

Advisor: Dr. Hema A. Murthy, Dr. S. Umesh

### MDSR (Media Data Science and Research) Intern @ Adobe India

- May 2022 – **Developed novel debiasing technique for Vision-Language models.**
- Aug 2022
- Led the team that proposed a novel approach for debiasing Vision-Language models such as CLIP, BLIP, etc, against various protected attributes like race, gender, and age.
  - We presented our findings at an international conference, CVPR 2023 in Vancouver, Canada

Mentors : Dr. Chirag Agarwal, Mayur Hemani

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## Research Experience

### Research Scholar @ SPRING Lab, IIT Madras

- 2021 – 2023 **Towards General-Purpose Audio Representation Learning.**
- Under the supervision of *Prof. S. Umesh*, I developed novel self-supervised frameworks to train audio classification models under low resource settings (in terms of data and model size)
  - We proposed an open-source benchmark called *LAPE* (Low-Resource Audio Pretraining and Evaluation) which contain multiple speech and non-speech classification task. Under this project, we also open-source all our models and codes for the research community.
  - We published our findings at many international conferences and journals e.g. ICASSP-2023, InterSpeech-2022, AAAI-2022, IEEE J-STSP-2022.
- 2022 – 2023 **Domain Adaptation in Speech Recognition Models (ASR).**
- Under the supervision of *Prof. S. Umesh* and *Prof. Hema A. Murthy*, I proposed novel solutions to tackle domain mismatch while fine-tuning a pre-trained ASR model.
  - Currently our work is under review for ICASSP 2024.

Advisors : Dr. S. Umesh, Dr. Hema A. Murthy,

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## Academic Achievements & Recognitions

- 2023 Presented 4 conference papers in IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), Rhodes Island, Greece
- 2023 Awarded *IEEE Signal Processing Society Travel Grant* to attend ICASSP
- 2023 Best Presentation/Demo Award in *Speech and Language Technology (SLT) Hackathon*, Qatar
- 2022 Part of Organizing Committee for *Gram Vaani ASR Challenge* hosted in Interspeech
- 2021 Runner up in *Multilingual and Code-Switching ASR Challenges for Low Resource Indian Languages* in Interspeech

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## Programming Skills

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| Programming Languages | Python (Framework: PyTorch, Keras, Numpy, Pandas, Sklearn, Matplotlib, Seaborn), C, C++, Java (Framework: Spring, Scala) |
| Web Technologies      | HTML 5, PHP, JSP, Javascript, ReactJS  |
| Database              | SQL, MySQL, MongoDB  |