Jitendra Kumar Dhiman

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Education

PhD in Speech Signal Processing   *Bengaluru, India*

ADVISOR: CHANDRA SEKHAR SEELAMANTULA, INDIAN INSTITUTE OF SCIENCE (IISc) BANGALORE, DEPARTMENT OF
ELECTRICAL ENGINEERING   *July 2014 — July 2021*

   Thesis title: Spectrotemporal Processing of Speech Signals Using the Riesz Transform

MTech in Signal Processing   *Hyderabad, India*

INDIAN INSTITUTE OF TECHNOLOGY (IIT) HYDERABAD, DEPARTMENT OF ELECTRICAL ENGINEERING   *July 2013*

   CGPA: 8.23/10

BTech in Electronics and Telecommunication Engineering   *IETE, New Delhi, India*

THE INSTITUTION OF ELECTRONICS AND TELECOMMUNICATION ENGINEERS   *June 2010*

   CGPA 8.00/10

Research Interests

SPEECH AND AUDIO SIGNAL PROCESSING, SPEECH SYNTHESIS FOR TTS APPLICATION, NATURAL LANGUAGE
PROCESSING, MACHINE LEARNING FOR SIGNAL PROCESSING, SEQUENCE-TO-SEQUENCE MODELING OF TIME SERIES
DATA, GENERATIVE AND DISCRIMINATIVE MODELING TECHNIQUES FOR MACHINE LEARNING

Skills

Coding   Python, PyTorch, Unix Shell, MATLAB, HTML, PHP, C++, C
Research   Critical thinking, Technical writing, Teaching, and Collaboration
Lab tools   Working knowledge and experience in usage of C.R.O. and signal generators
Documentation   Latex, Keynote
Signal processing DSP, Speech and Audio processing

Publications

Area: Optimization, speech denoising

1. Jishnu Sadasivan, **Jitendra K. Dhiman**, and Chandra Sekhar Seelamantula, "Musical Noise Suppression Using a Low-Rank and Sparse Matrix Decomposition Approach", in *Elsevier Speech Communication*, 2020 **(Journal)**.

Area: Speech analysis, synthesis and prosody modification

2. **Jitendra K. Dhiman**, Nagraj Adiga and Chandra Sekhar Seelamantula, "On the suitability of the Riesz Spectro-Temporal Envelope for WaveNet Based Speech Synthesis", *in Proc. of INTERSPEECH*, 2019.
3. **Jitendra Kumar Dhiman** and Chandra Sekhar Seelamantula, "A Spectro-Temporal Technique for Estimating Aperiodicity and Voiced/Unvoiced Decision Boundaries of Speech Signals," *in Proc. of International Conference on Acoustic, Speech and Signal Processing (ICASSP)*, 2019.
4. **Jitendra Dhiman**, Neeraj Sharma and Chandra Sekhar Seelamantula, "Multicomponent 2-D AM-FM Modeling of Speech Spectrograms", *in Proc. INTERSPEECH*, 2018.
5. **Jitendra Kumar Dhiman**, Nagraj Adiga and Chandra Sekhar Seelamantula, "A Spectro-Temporal Demodulation Technique for Pitch Estimation," *in Proc. of INTERSPEECH*, 2017.
6. Karthika Vijayan, **Jitendra Kumar Dhiman**, and Chandra Sekhar Seelamantula, "Time-Frequency Coherence for Periodic-Aperiodic Decomposition of Speech Signals," *in Proc. of INTERSPEECH*, 2017.
7. Senthil Kumar Mani, **Jitendra Kumar Dhiman** and K. Sri Rama Murty, "A Novel Speech Duration Modifier for Packet Based Communication System," *in Proc. of INTERSPEECH*, 2014.

Work Experience

Senior Engineer Lead *Bengaluru, India*
Qualcomm R&D, India *Nov 2024 - Present*
- Research and Development of scalable speech/audio codecs

Chief Engineer *Bengaluru, India*
Samsung R&D Institute, India *Dec 2021 - Present*
- Development of multilingual automatic speech recognition system

Project Associate *Bengaluru, India*
Indian Institute of Science, India *Jan 2014 - July 2014*
- Role: Prosody modification of speech, development of real time algorithm for time and pitch scale modification of speech in C++, the algorithm was successfully deployed for real time application in a TTS (Hindi) system in collaboration with C-DAC center Mumbai
- Mentor: Prof. Chandra Sekhar Seelamantula

Project Associate *Hyderabad, India*
Indian Institute of Technology Hyderabad *June 2013 - Dec 2013*
- Prosodically guided phonetic engine for searching speech databases in Indian languages
- Mentor: Prof. K. Sri Rama Murthy

Electronics Engineer *Meerut, India*
PEP INFOTECH LIMITED, Meerut *Sept 2010 - March 2011*
- Activities involved:
    - Design and development of digital inverters (sin wave and square wave) with LCD display
    - Troubleshooting and testing of electronics circuits

Organizational Skills

2017	**Workshop Volunteer**, Winter School on Speech and Audio Processing (WiSSAP)	*IISc*
2014-19	**Open Day**, Conceptualized and organized events demonstrating research to public	*IISc*
2016-20	**Seminar Volunteer**, Responsible for organizing technical seminars within the department on weekly basis	*IISc*

Awards and Achievements

2018	**Best Poster Presentation Award**, at EECS divisional symposium	*IISc Bangalore*
2010	**Secured 99.57 percentile**, in Graduate Aptitude Test in Engineering (GATE) with AIR 579 among 1,47,000 students	
2011-2013	**MHRD MTech Scholarship**, for pursuing MTech from IIT Hyderabad	
2014-2019	**MHRD PhD Scholarship**, for pursuing PhD from IISc Bangalore	
2019	**Pratiksha Travel Fellowship**, to attend Interspeech conference for presenting my research work	*Graz, Austria*
2018	**Lead Volunteer**, for oral and tutorial sessions at Interspeech	*HICC, Hyderabad*

Academic Services

2014-2021	**Reviewer**, Elsevier Speech Communication, Annual ISCA INTERSPEECH conference	
2019	**Teaching assistant**, for the course on Matrix Theory	*IISc*
2012	**Teaching assistant**, for the course on digital signal processing	*IIT, Hyderabad*

References

Prof. Chandra Sekhar Seelamantula, Dept. Electrical Engineering, Indian Institute of Science Bangaore, India	*css@iisc.ac.in*
Retired Prof. T. V. Sreenivas, Dept. Electrical Communication Engineering, Indian Institute of Science Bangalore, India	*tvsree@iisc.ac.in*
Prof. Sri Rama Murty Kodukula, Dept. EE, Indian Institute of Technology Hyderabad, India	*ksrm@ee.iith.ac.in*