

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 — present

Thesis title: Spectrotemporal Processing of Speech Signals Using the Riesz Transform (Submitted on July 27, 2021)

MTech in Signal Processing

Hyderabad, India

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

July 2013

CGPA: 8.27/10

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

Research 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 - June 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 Bangalore, 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