SRIRAM GANAPATHY

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Interests

My research interests include signal processing, machine learning, deep learning, auditory neuroscience, robust speech recognition and audio applications like information extraction, enhancement and coding.

Current Position

I am an Associate Professor at the Electrical Engineering, Indian Institute of Science, Bangalore. I manage the Learning and Extraction of Acoustic Patterns (LEAP) laboratory where the activities are focussed on information extraction and analysis of acoustic signals like speech and audio as well as in analyzing the neural code of speech and language. I was also a Visiting Faculty Researcher at Google Research India, Bangalore from October 2022-December 2024.

Education

PhD, Center of Language and Speech Processing (4.0/4.0) Johns Hopkins University, Baltimore, USA.	Jan. 2009-Dec. 2011
Master of Engineering, Signal Processing (7.4/8.0) Indian Institute of Science, Bangalore, India.	Aug. 2004-July. 2006
Bachelor of Technology, Electronics and Communications (82%) College of Engineering, Trivandrum, India	Oct. 2000- June. 2004

Skills

Programming: MATLAB, C, Python, HTML.

Tools: HTK, PyTorch, Kaldi, Latex, Theano, Tensorflow.

Operating Systems: Unix/Linux, Windows, Mac OS X

Honors and Awards

Nature Scientific Data, Editorial Board Member 2025-

IEEE Signal Processing Education Board (Nominated Member) & SigPort Chief Editor - 2022-2024

Verisk AI Faculty Award - 2021, 2022.

Technical Area Pick Award - Journal of Acoustical Society of America, 2019

Subject Editor - Elsevier Speech Communications Journal, from January 2019-2025.

Dept. of Atomic Energy, Young Scientist Research Award, 2018.

Young Investigator Award, Prathiksha Trust, Indian Institute of Science Bangalore.

Microsoft Award - "Best Summer Workshop Award in Artificial Social Intelligence". [Jointly with P. Jyoti, IITB].

Early Career Research Award, Department of Science and Technology, India, May 2017

IEEE Senior Member, April, 2017.

Patent Application Invention Achievement Award, IBM Watson Research Center, New York, USA, 2015.

Best outgoing student award for M.E. Signal Processing (Gold Medal), Dept. of ECE, Indian Institute of Science, Bangalore, 2006.

Organization and Chair Positions

Sponsorship Chair, IEEE ICASSP, 2025, Hyderabad, India

Technical Program Chair, "SPCOM" 2024, IISc Bangalore.

General Co-Chair, "Winter School of Speech and Audio Processing (WISSAP)", Trivandrum, Kerala, Jan. 2019.

Interspeech Sponsorship Committee Chair, Interspeech 2018, Hyderabad, India.

Work Experience

Assoc./Asst. Prof, Electrical Engg. IISc Bangalore.

Leading the research activities in learning and extraction of acoustic patterns (LEAP) labs - working on understanding, analyzing and generating signals using large language models (LLMs), understanding the human encoding of speech and language (neuroscience), developing speech and language systems at scale for Indian languages, making machines capable of interpreting emotions and paralinguistic of speech data, explainability and interpretability of large machine learning models.

Faculty Research Scientist, Google Research, India, Bangalore

Representation learning of speech using meta-data aware learning. Developing speech representations which are aligned with text and multimodal signals. Incorporating speech inputs to large language models (LLMs) and improve the linguistic coverage of these models for Indic languages. Evaluating and benchmarking LLMs on multi-modal speech-text tasks.

Research Staff Member, IBM T.J Watson Center, NY, USA.

Research on signal analysis and processing of noisy and degraded radio channel speech for biometric applications like speaker and language recognition as well as speech activity detection. These technologies are developed for the U.S. Government under the Defense Advanced Research Project Agency. Full-time employment (40 hours per week).

Research Intern, IBM T.J Watson Center, NY, USA.

June 2010 - Aug 2010 The main focus of this internship was to develop feature normalization techniques for speaker verification in far-field reverberant environments. Full-time employment (40 hours per week).

Research Assistant, Idiap Research Institute, Switzerland.

Oct. 2006 - Jan 2009

Jan. 2016 -

Oct 2022 - Dec. 2024

Dec.2011 - Dec. 2015

The goal of this work was to investigate the use of long-term energy summarization of speech signals for speech recognition and coding applications. Full-time employment (40 hours per week).

Teaching

Course Instructor E9 309 - "Advanced Deep Learning", Indian Institute of Science, Aug-Dec 2020, 2021.

Course Instructor E9 205 - "Machine Learning for Signal Processing", Indian Institute of Science, Aug-Dec 2016, 2017, 2018, 2019, 2021, Jan-Apr. 2022, 2025.

Course Instructor for "E9-261 - Speech Information Processing", Indian Institute of Science, Jan-April, 2016, 2017, 2018, 2019 and 2020. (Jointly given with Dr. Prasanta Ghosh).

Course Instructor in - "Digital Health and Imaging - PG certification program" with Talents Print, for modules of signal processing and deep learning, 2020, 2021, 2022.

Course Instructor in - "Deep Learning - PG certification program" with Talents Print, for modules of signal processing and deep learning, 2021, 2022, 2023, 2024, 2025.

Course Instructor - "Machine Learning for Sensory Signals", Center for Continuing Education, Indian Institute of Science, Jan-Apr 2017.

Course Instructor - "Deep Learning : Theory and Practice", Center for Continuing Education, Indian Institute of Science, Jan-Apr 2018, 2019, 2020.

Teaching Assistant for 'Information processing of sensory signals", for Spring 2009, Spring 2010, Johns Hopkins University.

External Talks and Seminars

"Real-World AI in Healthcare and the Quest for Explainability", AIML Talk Series, MVJ College, Bangalore, March 2025.

"Introduction to multi-modal LLMs, Opportunities and Challenges", AI Confluence, IIT Guwahati, Dec. 2024.

"Emotional Artificial Intelligence", Plenary talk, WiSSAP 2024, December 2024, KL University, Vijayawada.

"Speech EEG Understanding", SPARC Workshop, IITM, January 2024.

"Explainable machine learning", FDP, College of Engineering, Trivandrum, Jan. 2024.

"Self supervision and large language modules-The Buzz of Generative AI", Keynote, ICCC, Trivandrum 2023.

"Identifying CoVID-19 symptoms for audio and acoustics", Invited Survey Talk, Interspeech 2021.

"Towards Sound And Symptom Based Testing of CoVID-19", Airbus, June 2021.

"Analyzing Speech Using EEG", MS Ramaiah Institute of Technology, December 2019, Bangalore.

"Speaker and Language Recognition in the Wild" - Invited perspective talk, Interspeech 2018, Hyderabad.

"Language learning and the brain", University College London, July 2018.

"Deep Learning for Multi-channel Speech Processing", Samsung Research India, Bangalore, November, 2017.

"Introduction to Speech Recognition" - Department of Psychophysics, Carnegie Mellon University, August, 2017.

"Deep Learning - Theory and Practice", Rajiv Gandhi Institute of Technology, Kottayam, Kerala, April, 2017.

"Introduction to Deep Learning", DRDO CAIR labs, Bangalore, Dec. 2016.

"Machine Learning for Speech Processing", IIIT- Bangalore, Sept. 2016.

"Deep Learning for Speech Processing", IBM India Research Labs, February 2016.

"The Art and Science of Speech Feature Engineering", Tutorial at Interspeech, Singapore, Sept. 2014.

"Algorithms in Speech Signal Processing", College of Engineering, Trivandrum, India, Nov., 2013. "Robust Processing of Noisy and Degraded Channel Speech", Computational Science an Artificial Intelligence Laboratory, MIT, Cambridge, USA, Oct., 2013.

"Dealing with Noisy Speech Using Autoregressive Models", Idiap Research Institute, Martigny, Switzerland, Aug, 2013.

"Signal analysis using autoregressive models of amplitude modulation", Electrical and Computer Engineering, University of Texas, Dallas, Feb. 2013.

"Frequency Domain Linear Predictive Analysis of Speech", Indian Institute of Science, Bangalore, India, Nov. 2011.

"Signal modeling with long term feature processing", Raytheon BBN Technologies, Cambridge, MA, USA, July 2011.

Professional Memberships

IEEE Signal Processing Society - Senior Member.

International Speech Communication Association (ISCA).

Patents

"Identifying and Mitigating Mismatched Language Code in Multilingual ASR" with Google DeepMind [IDF - March 2024].

"Augmenting Large Language Models with other Large Language Models," with Google Research [IDF - September 2023].

"Method for System Combination in Audio Analytics Application", with IBM Watson Center, USA. [Granted June 2017].

"Spectral Noise Shaping in Audio Coding Based on Spectral Dynamics in Frequency Sub-bands", with Qualcomm Inc, [Approved Nov. 2011].

"Temporal Masking in Audio Coding Based on Spectral Dynamics in Frequency Sub-bands", with

Qualcomm Inc, [Approved May 2009].

Publications

Google scholar page - https://scholar.google.co.in/citations?user=cgpzrtcAAAAJ&hl=en

I. PhD Thesis

A.Soman, "Investigating Neural Mechanisms of Word Learning and Speech Perception", Indian Institute of Science, April. 2024. [5th PhD student]

P. Singh, "Graph Clustering Approaches for Speaker Diarization of Conversational Speech", Indian Institute of Science, Feb. 2024. [4th PhD student]

P. R. Anurenjan, "Dereverberation of Speech Using Autoregressive Models of Sub-band Envelopes", Indian Institute of Science, Sep. 2023. [3rd PhD student]

S.Ramoji, "Supervised Learning Approaches for Language and Speaker Recognition", Indian Institute of Science, July 2023. [2nd PhD student]

P. Agrawal, "Neural Representation Learning for Speech and Audio Signals", Indian Institute of Science, Jan. 2021. [1st PhD student]

S. Ganapathy, "Signal Analysis using Autoregressive Models of Amplitude Modulation ", Johns Hopkins University, Jan. 2012.

II. <u>Peer Reviewed Journals</u>

P. Singh, **S. Ganapathy**, "End-to-End Supervised Hierarchical Graph Clustering for Speaker Diarization," IEEE/ACM Transactions on Audio, Speech, and Language Processing, 2024.

D. Bhattacharya, A. H. Poorjam, D. Mittal, **S. Ganapathy**, "Gradient-free Post-hoc Explainability Using Distillation Aided Learnable Approach," IEEE Journal of Selected Topics in Signal Processing (JSTSP)-Special Series on AI in Signal & Data Science, 2024. [Impact Factor 8.7]

S. Baghel, S. Ramoji, S. Jain, P. R. Chowdhuri, P. Singh, D. Vijayasenan, and **S. Ganapathy**. "Summary of the DISPLACE challenge 2023—DIarization of SPeaker and LAnguage in Conversational Environments." Elsevier Speech Communication (2024): 103080.

V. Krishna, T. Sai, S. Ganapathy, "Representation Learning With Hidden Unit Clustering For Low Resource Speech Applications," IEEE/ACM Transactions on Audio, Speech, and Language Processing, 2023.

A. Purushothaman, D. Dutta, R. Kumar, S. Ganapathy, "Speech Dereverberation with Frequency Domain Autoregressive Modeling," IEEE/ACM Transactions on Audio, Speech, and Language Processing, 2023.

S. R. Chetupalli, P. Krishnan, N.K.Sharma, A.Muguli, R.Kumar, V.Nanda, L.M.Pinto, P.K.Ghosh, S. Ganapathy, "Multi-Modal Point-of-Care Diagnostics for COVID-19 Based on Acoustics and

Symptoms," IEEE Journal of Translational Engineering in Health and Medicine, 2023.

D. Bhattacharya, N. K. Sharma, D. Dutta, S. R. Chetupalli, P. Mote, **S. Ganapathy**, S. Nori, S. Gonuguntla, M. Alagesan, "Coswara: A respiratory sounds and symptoms dataset for remote screening of SARS-CoV-2 infection," Nature Scientific Data, 2023. [Impact Factor 5.8]

S. Ramoji, P. Krishnan, and S. Ganapathy, "PLDA inspired Siamese networks for speaker verification," Computer Speech and Language, 2022.

A. Soman, P. Ramachandran, and **S. Ganapathy**, "ERP Evidences of Rapid Semantic Learning In Foreign Language Word Comprehension," Frontiers in Neuroscience, 2022.

N. K. Sharma, A. Muguli, P. Krishnan, R. Kumar, S. R. Chetupalli, **S. Ganapathy**, "Towards sound based testing of COVID-19 -Summary of the first Diagnostics of COVID-19 using Acoustics (DiCOVA) Challenge," Elsevier Journal on Computer, Speech and Language, 2022.

A. Purushothaman, A. Sreeram, R. Kumar, & S. Ganapathy, "Dereverberation of Autoregressive Envelopes for Far-field Speech Recognition," Elsevier Journal on Computer, Speech and Language, 2021.

J. R. Katthi, **S. Ganapathy**, " Deep Correlation Analysis for Audio-EEG Decoding ," IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2021.

P. Singh, **S. Ganapathy**, "Self-supervised Representation Learning With Path Integral Clustering For Speaker Diarization," IEEE Transactions and Audio, Speech and Language Processing, 2021.

P. Agrawal, S. Ganapathy, "Interpretable Representation Learning for Speech and Audio Signals Based on Relevance Weighting," IEEE Transactions and Audio, Speech and Language Processing, Vol. 28, pp. 2823--2836, 2020.

N. Sharma, V. Krishnamohan, **S. Ganapathy**, A. Gangopadhayay, L. Fink, ``Acoustic and linguistic features influence talker change detection", JASA Express letters, Vol. 147 (5), 2020.

S. Babu, D. Vijayasenan and **S. Ganapathy**, "Automatic Speaker Profiling from Short Duration Speech Data", Elsevier Speech Communications, April 2020.

B. Padi, A. Mohan and S. Ganapathy, "Towards Relevance and Sequence Modeling in Language Recognition", IEEE Transactions on Audio, Speech and Language Processing, March, 2020.

S. Ramoji and S. Ganapathy, "Supervised I-vector Modeling for Language and Accent Recognition", Elsevier Journal on Computer, Speech and Language, Oct. 2019.

A. Kanagasundaram, S. Sridharan, S. Ganapathy and C. Fookes, "A Study on Pairwise LDA for X-vector based Speaker Recognition", IET Electronic Letters, (2019).

P. Agrawal and **S. Ganapathy**, "Modulation Filter Learning Using Deep Variational Networks for Robust Speech Recognition", IEEE Journal of Selected Topics in Signal Processing, May 2019. [Impact Factor 8.7]

A. Soman, Madhavan C. R., K. Sarkar, and **S. Ganapathy**, "An EEG Study On The Brain Representations in Language Learning", IOP Journal on Biomedical Physics and Engineering Express, January 2019.

N. Sharma, S. Ganesh, **S. Ganapathy** and L. Holt, "Talker change detection: A comparison of human and machine performance", Journal of Acoustical Society of America, December 2018. [JASA Technical Area Pick Award]

V. S. Kadimesetty, S. Gutta, **S. Ganapathy**, and P. K. Yalavarthy, "Convolutional Neural Network based Robust Denoising of Low-Dose Computed Tomography Perfusion Maps", IEEE Transactions on Radiation and Plasma Medical Sciences, August 2018.

S. Gutta, V. S. Kadimesetty, S. K. Kalva, M. Pramanik, **S. Ganapathy** and P. K. Yalavarthy, "Deep Neural Network Based Bandwidth Enhancement of Photoacoustic Data", Journal of Biomedical Optics, October 2017.

G. Kocavs, L. Toth, D. V. Compernolle and **S. Ganapathy**, "Increasing the Robustness of CNN Acoustic Models using ARMA Spectrogram Features and Channel Dropout", Elsevier Pattern Recognition Letters, September 2017.

P. Agrawal and S. Ganapathy, "Unsupervised Modulation Filter Learning for Noise-Robust Speech Recognition", Journal of Acoustical Society of America, September 2017.

S. Ganapathy, "Multi-variate Autoregressive Spectrogram Modeling for Noisy Speech Recognition", IEEE Signal Processing Letters, July 2017.

S. Ganapathy, M. Omar, "Auditory Motivated Front-end for Noisy Speech Using Spectro-temporal Modulation Filtering", Journal of Acoustical Society of America, EL343-349, Vol. 136(5), Nov. 2014.

S. Ganapathy, S. H. Mallidi and H. Hermansky, "Robust Feature Extraction Using Modulation Filtering of Autoregressive Models", IEEE Transactions on Audio, Speech and Language Processing, Vol. 22(8), pp. 1285-1295, Aug. 2014.

S. Ganapathy and J. Pelecanos, "Enhancing Frequency Shifted Speech Signals in Single Side Band Communication", IEEE Signal Processing Letters, Vol. 20(12), pp. 1231-1234, Oct. 2013.

S. Ganapathy and H. Hermansky, "Temporal Resolution Analysis in Frequency Domain Linear Prediction", Journal of Acoustical Society of America, EL436-442, Vol. 132(5), Oct. 2012.

S. Ganapathy, S. Thomas and H. Hermansky, "Temporal envelope compensation for robust phoneme recognition using modulation spectrum", Journal of Acoustical Society of America, Vol. 128(6), pp. 3769-3780, Dec. 2010.

S. Ganapathy, P. Motlicek and H. Hermansky, "Autoregressive Models Of Amplitude Modulations In Audio Compression", IEEE Transactions on Audio, Speech and Language Processing, Vol. 18(6), pp.1624-1631, Aug. 2010.

P. Motlicek, **S. Ganapathy**, H. Hermansky and H. Garudadri, "Wide-Band Audio Coding based on Frequency Domain Linear Prediction", EURASIP Journal on Audio, Speech, and Music Processing, Vol. 2010(3), pp. 1-14, Jan. 2010.

S. Ganapathy, S. Thomas and H. Hermansky, "Modulation Frequency Features For Phoneme Recognition In Noisy Speech", Journal of Acoustical Society of America, EL8-12, Vol. 125(1), Jan. 2009.

S. Thomas, S. Ganapathy and H. Hermansky, "Recognition of Reverberant Speech Using Frequency Domain Linear Prediction", IEEE Signal Processing Letters, Vol. 15, pp. 681-684 Nov. 2008.

III. <u>Conferences</u>

S. Dutta, S. Balaji, R. Varada, V. Salinamakki, **S. Ganapathy**, "ABHINAYA -- A System for Speech Emotion Recognition In Naturalistic Conditions Challenge", Interspeech 2025, Netherlands.

D. Bhattacharya, A. Kulkarni, **S. Ganapathy**, "Benchmarking and Confidence Evaluation of LALMs For Temporal Reasoning", Interspeech 2025, Netherlands.

N. Agarwal, **S. Ganapathy**, "Spoken Language Understanding on Unseen Tasks With In-Context Learning", Interspeech 2025, Netherlands.

S. Dutta, **S. Ganapathy**, "LLM supervised Pre-training for Multimodal Emotion Recognition in Conversations", IEEE ICASSP 2025, Hyderabad.

J. Kim, S. Mavandadi, K. Audhkasi, S. Bharadwaj, B. Farris, T. Chen, B. Ramabhadran, S. Ganapathy, "Identifying and Mitigating Mismatched Language Code in Multilingual ASR", IEEE ICASSP 2025, Hyderabad.

D. Prabhu, A. Gupta, O. Nitsure, P. Jyothi, **S. Ganapathy**, "Improving Self-supervised Pre-training using Accent-Specific Codebooks", Interspeech 2024, Kos Island, Greece.

S. B. Kalluri, P. Singh, P.R. Chowdhuri, A. Kulkarni, S. Baghel, P. Hegde, S. Sontakke, Deepak K T, S.R.M. Prasanna, D. Vijayasenan, **S. Ganapathy**, "The Second DISPLACE Challenge : DIarization of SPeaker and LAnguage in Conversational Environment", Interspeech 2024, Kos Island, Greece.

R. Bansal, B. Samanta, S. Dalmia, N. Gupta, **S. Ganapathy**, A. Bapna, P. Jain, and P. Talukdar. "LLM Augmented LLMs: Expanding Capabilities through Composition." ICLR 2024. [A* Conference]

S. Dutta and S. Ganapathy, "Zero Shot Audio to Audio to Audio Emotion Transfer with Speaker Disentanglement", ICASSP 2024, Seoul, South Korea.

B., Shikhar, M. Ma, S. Vashishth, A. Bapna, **S. Ganapathy**, V. Axelrod, S. Dalmia et al. "Multimodal Modeling for Spoken Language Identification." In ICASSP 2024, pp. 11526-11530. IEEE, 2024.

M.Thakkar, T.Bolukbasi, **S.Ganapathy**, S.Vashishth, S.Chandar, P.Talukdar, "Self-Influence Guided Data Reweighting for Language Model Pre-training", EMNLP Main Proceedings 2023, Singapore. [A* Conference]

D. Prabhu, P. Jyothi, **S. Ganapathy**, V. Unni, "Accented Speech Recognition With Accent-specific Codebooks", EMNLP Main Proceedings 2023, Singapore. [A* Conference]

A. Raj, S. Bharadwaj, S. Ganapathy, M. Ma, S.Vashishth, "MASR:Multi-Label Aware Speech Representation", IEEE ASRU 2023, Taiwan.

V. Krishna and S. Ganapathy, "Pseudo-Label Based Supervised Contrastive Loss for Robust Speech

Representations", IEEE ASRU 2023, Taiwan.

S. Vashishth, S. Bharadwaj, **S. Ganapathy**, A. Bapna, M. Ma, W. Han, V. Axelrod, P. Talukdar, "Label Aware Speech Representation Learning For Language Identification", Interspeech 2023, Dublin, Ireland.

A. Soman, V. Sinha, and **S. Ganapathy**, "Enhancing the EEG Speech Match-Mismatch Tasks With Word Boundaries", Interspeech 2023, Dublin, Ireland.

S. Baghel, S. Ramoji, Sidharth, Ranjana H, P. Singh, S. Jain, P. R. Chowdhuri, K. Kulkarni, S. Padhi, D. Vijayasenan and **S. Ganapathy**, "DISPLACE Challenge: DIarization of SPeaker and LAnguage in Conversational Environments", Interspeech 2023, Dublin, Ireland.

P. Singh, A. Kaul and **S. Ganapathy**, "Supervised Hierarchical Clustering Using Graph Neural Networks for Speaker Diarization", ICASSP 2023, Rhodes Island, Greece.

D. Dutta, D. Bhattacharya, **S. Ganapathy**, A.H. Poorjam, D. Mittal, and M. Singh, "Interpretable Acoustic Representation Learning on Breathing and Speech Signals for COVID-19 Detection", Interspeech 2022, Incheon, South Korea.

D. Bhattacharya, D. Dutta, N. K. Sharma, S. Raj Chetupalli, P. Mote, **S. Ganapathy**, Chandrakiran C, Sahiti Nori, Suhail K K, S. Gonuguntla, and M. Alagesan, "Analyzing the impact of SARS-CoV-2 variants on respiratory sound signals", Interspeech 2022, Incheon, South Korea.

D. Bhattacharya, D. Dutta, N. K. Sharma, S. Raj Chetupalli, P. Mote, **S. Ganapathy**, Chandrakiran C, Sahiti Nori, Suhail K K, S. Gonuguntla, and M. Alagesan, "Coswara: A website application enabling COVID-19 screening by analysing respiratory sound samples and health symptoms", Interspeech 2022, Incheon, South Korea.

S. Dutta and **S. Ganapathy**, "Multimodal Transformer with Learnable Frontend and Self Attention for Emotion Recognition", ICASSP 2022, Singapore.

N K Sharma, S. Raj Chetupalli, D. Bhattacharya, D. Dutta, P. Mote, and **S. Ganapathy**, "The Second DiCOVA Challenge: Dataset and performance analysis for Diagnosis of COVID-19 using acoustics ", ICASSP 2022, Singapore.

R. Kumar, A. Purushothaman, A. Sreeram, and **S. Ganapathy**, "End-to-end speech recognition with joint dereverberation of sub-band autoregressive envelopes", ICASSP 2022, Singapore.

V. Krishna PS and S. Ganapathy, "Self Supervised Representation Learning with Deep Clustering for Acoustic Unit Discovery from Raw Speech", ICASSP 2022, Singapore.

P. Singh and S. Ganapathy, "Self-Supervised Metric Learning With Graph Clustering For Speaker Diarization", ASRU 2021, Cartagena.

A. Flavio, A. Poorjam, D. Mittal, C. Dognin, A. Muguli, R. Kumar, S. R. Chetupalli, **S. Ganapathy** and M. Singh, "Investigating the Feature Selection and Explainability of COVID-19 Diagnostics from Cough Sounds", Interspeech 2021, Brno, Czech Republic.

P. Singh, R. Varma, V. Krishnamohan, S. R. Chetupalli and **S. Ganapathy**, "LEAP Submission for the Third DIHARD Diarization Challenge", Interspeech 2021, Brno, Czech Republic.[Video][PPT]

P. R. Gudepu, R. Kumar, M. K. Jayesh, A. Purushothaman, **S. Ganapathy** and M. A. Basha, "SRIB-LEAP lab submission to Far-field Multi-Channel Speech Enhancement Challenge for Video Conferencing", Interspeech 2021, Brno, Czech Republic.

N. Ryant, P. Singh, V. Krishnamohan, R. Varma, K. Church, C. Cieri, J. Du, **S. Ganapathy** and M. Liberman, "The Third DIHARD Diarization Challenge", Interspeech 2021, Brno, Czech Republic.

A. Muguli, L. Pinto, R. Nirmala, N. Sharma, P. Krishnan, P. Ghosh, R. Kumar, S. Bhat, S. R. Chetupalli, **S. Ganapathy**, S. Ramoji and V. Nanda,""DiCOVA Challenge: Dataset, task, and baseline system for COVID-19 diagnosis using acoustics"", Interspeech 2021, Brno, Czech Republic.

D. Dutta, P. Agrawal, and **S. Ganapathy**,""A Multi-Head Relevance Weighting Framework for Learning Raw Waveform Audio Representations", ", WASPAA 2021, New York, USA.

Kalluri, S. B., Vijayasenan, D., **Ganapathy, S.**, & Krishnan, P., "NISP: A Multi-lingual Multi-accent Dataset for Speaker Profiling", ICASSP 2021, Toronto.

Katthi, J. R., & Ganapathy, S., "Deep Multiway Canonical Correlation Analysis For Multi-Subject Eeg Normalization.", ICASSP 2021, Toronto.

Basak, S., Agarwal, S., **Ganapathy**, S., & Takahashi, N.,"End-to-End Lyrics Recognition with Voice to Singing Style Transfer ", ICASSP 2021, Toronto.

P. Agrawal and S. Ganapathy,"Representation Learning For Speech Recognition Using Feedback Based Relevance Weighting", ICASSP 2021, Toronto

N. Sharma, P. Krishnan, R. Kumar, S. Ramoji, S. R. Chetupalli, R. Nirmala, P. K. Ghosh and S. Ganapathy, "Coswara -- A Database of Breathing, Cough, and Voice Sounds for COVID-19 Diagnosis ", Interspeech 2020, Beijing, October 2020.

S. Ramoji, P. Krishnan and S. Ganapathy, "Neural PLDA Modeling for End-to-end Speaker Verification", Interspeech 2020, Beijing, October 2020.

P. Agrawal and **S. Ganapathy**, "Robust Raw Waveform Speech Recognition Using Relevance Weighted Representations", Interspeech 2020, Beijing, October 2020.

V. Krishnamohan, A. Soman, A. Gupta and **S. Ganapathy**, "Audiovisual Correspondence Learning in Humans And Machines", Interspeech 2020, Beijing, October 2020.

A. Purushothaman, A. Sreeram, R. Kumar and **S. Ganapathy**, "Deep Learning Based Dereverberation of Temporal Envelopes for Robust Speech Recognition", Interspeech 2020, Beijing, October 2020.

P. Singh and **S. Ganapathy**, "Deep Self-Supervised Hierarchical Clustering for Speaker Diarization", Interspeech 2020, Beijing, October 2020.

S. R. Chetupalli and **S. Ganapathy**, "Context Dependent RNNLM for Automatic Transcription of Conversations", Interspeech 2020, Beijing, October 2020.

J. Reddy and S. Ganapathy, "Deep Canonical Correlation Analysis For Decoding The Auditory Brain",

IEEE EMBC, Toronto, Canada, July 2020.

S. Ramoji, P. Krishnan, B. Mysore, P. Singh and **S. Ganapathy**, "LEAP System for SRE19 Challenge ---Improvements and Error Analysis", Speaker Odyssey Workshop, November, 2020.

S. Ramoji, P. Krishnan, and **S. Ganapathy**, "NPLDA: A Deep Neural PLDA Model for Speaker Verification", Speaker Odyssey Workshop, November, 2020.

N. Sharma, V. Krishnamohan, **S. Ganapathy**, A. Gangopadhayay and L. Fink "On The Impact of Language Familiarity In Talker Change Detection", ICASSP 2020.

A. Purushothaman, A. Sreeram and **S. Ganapathy** "3-D Feature and Acoustic Modeling for Far-Field Speech Recognition", ICASSP 2020.

R. Kumar, A. Sreeram, A. Purushothaman and **S. Ganapathy** "Unsupervised Neural Mask Estimator For Generalized Eigen-Value Beamforming Based ASR", ICASSP 2020.

N. Takahashi, M. Singh, S. Basak, P. Sudarsanam, **S. Ganapathy**, Y. Mitsufuji "Improving Voice Separation by Incorporating End-to-end Speech Recognition", ICASSP 2020.

K. Praveen, A. Gupta, A. Soman and **S. Ganapathy** "Second Language Transfer Learning in Humans and Machines Using Image Supervision", IEEE ASRU, Singapore. 2019.

S. Bansal, K. Malhotra, **S. Ganapathy**, "Speaker and Language Aware Training for End-to-End ASR", IEEE ASRU, Singapore, 2019 [Short-listed for Best Paper Award].

N. Ryant, K. Church, C. Cieri, A. Cristia, J. Du, **S. Ganapathy** and M. Liberman, "The Second DIHARD Diarization Challenge: Dataset - task - and baselines", INTERSPEECH, Graz, Austria, 2019.

P. Singh, Harsha Vardhan M A, **S. Ganapathy** and A. Kanagasundaram, "LEAP Diarization System for the Second DIHARD Challenge", INTERSPEECH, Graz, Austria, 2019.

B. Padi, A. Mohan and **S. Ganapathy**, "Attention based Hybrid I-vector BLSTM Model for Language Recognition", INTERSPEECH, Graz, Austria, 2019.

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