PRACHI SINGH

PhD Scholar
LEAP Lab
Electrical Engineering
Indian Institute of Science, Bangalore

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RESEARCH INTERESTS

Speaker Diarization, Machine Learning, Variational Inference, Metric Learning, Self-supervised learning, Graph based Clustering, Graph Neural Networks.

SKILLS

Languages	Python, C, C++, Shell
Libraries	Kaldi, Pytorch, OpenCV
Software & Tools	Spyder, Jupyter Notebook, MATLAB, MS Office,Visual Studio

EDUCATION & COURSES

Ph.D.	*2017 - Present*
Electrical Engineering	(CGPA : 8.00/10)
Indian Institute of Science, Bangalore	
B.Tech	*2011 - 2015*
Electronics & Telecommunication	(CGPA : 8.67/10)
College of Engineering, Pune	

Courses

- Machine Learning for Signal Processing
- Pattern Recognition and Neural Networks
- Data Structures
- Computational Methods of Optimization
- Speech Information Processing
- Stochastic Models and Applications
- Matrix Theory
- Detection and Estimation Theory
- Adaptive Signal Processing

EXPERIENCE

Software Modelling Engineer

Fiat Chrysler Automobiles

📅 July 2015 - July 2017

- Electronic Control Unit(ECU) modelling and Network Management using CAN communication, Hardware In Loop Testing and Validation of Infotainment system.

ACHIEVEMENTS

- ISCA Travel Grant for INTERSPEECH, 2019
- Runner-up in "Second DIHARD Challenge 2019" , April 2019
- Late Shri Manoharbhai Patel Memorial Gold Medal in XII Std
- Dhirubhai Foundation Scholarship in XII Std

PUBLICATIONS

- **P. Singh** and S. Ganapathy, "Self-supervised Representation Learning With Path Integral Clustering For Speaker Diarization." in IEEE/ACM Transactions on Audio, Speech, and Language Processing.
- **P. Singh**, R. Varma, V. Krishnamohan, S. R. Chetupalli, and S. Ganapathy. "LEAP Submission for the Third DIHARD Diarization Challenge." arXiv preprint arXiv:2104.02359 (2021).
- N. Ryant, **P. Singh**, V. Krishnamohan, R. Varma, K. Church, C. Cieri, J. Du, S. Ganapathy, and M. Liberman. "The Third DIHARD Diarization Challenge." arXiv preprint arXiv:2012.01477 (2020).
- **P. Singh** and S. Ganapathy, "Deep Self-Supervised Hierarchical Clustering for Speaker Diarization", INTERSPEECH 2020.
- S. Ramoji, P. Krishnan, B. Mysore, **P. Singh**, S. Ganapathy, "LEAP System for SRE19 Challenge – Improvements and Error Analysis", Speaker Odyssey Workshop 2020.
- S. Ramoji, P. Krishnan, B. Mysore, **P. Singh**, S. Ganapathy, "Pairwise Discriminative Neural PLDA for Speaker Verification", arXiv 2020.
- **P. Singh**, Harsha Vardhan MA, S. Ganapathy, A. Kanagasundaram, "LEAP Diarization System for the Second DIHARD Challenge", INTERSPEECH 2019.
- A. Kanagasundaram, S. Sridharan, S. Ganapathy, **P. Singh**, C. Fookes, "A Study of X-vector Based Speaker Recognition on Short Utterances", INTERSPEECH 2019.
- S. Ramoji, A. Mohan, B. Mysore, A. Bhatia, **P. Singh**, Harsha Vardhan, S. Ganapathy, "The LEAP Speaker Recognition System for NIST SRE 2018 Challenge", ICASSP 2019.

TEACHING EXPERIENCE

Teaching Assistant

📍 Indian Institute of Science, Bangalore

- **Advanced Deep Learning [E9:309]**

  📅 Fall 2020

- **Deep learning theory and Practice [CCE]**

  📅 Spring 2020

- **Machine Learning and Signal Processing [E9:205]**

  📅 Fall 2019

WORKSHOPS AND CONFERENCES

- Presented in IISc EECS Symposium May, 2021.
- Presented in IEEE-IISc Shannon's Day talk series, April, 2021
- Presented in DIHARD-III challenge workshop 2020
- Women in Research Talk, PyConIndia 2020, Online
- Presented paper in Interspeech 2020.
- Winter School on Speech and Audio Processing (WiSSAP) 2020,IIT Mandi, India
- Presented paper and poster in Interspeech 2019, Graz, Austria
- Summer school on mathematics for data science 2019 organised by IFCAM and IISc
- Winter School on Speech and Audio Processing (WiSSAP) 2019, Trivandrum, India
- Interspeech 2018, Hyderabad, India
- Brain Computation and Learning Workshop, 2018, Bangalore, India
- International Conference on Signal Processing and Communications(SPCOM), 2018

ARTICLES

- Speech Processing Professional Interview in theinterviewportal.com.
- Article: Probabilistic Linear Discriminant Analysis Explained in towardsdatascience.com

EXTRA-CURRICULAR

- Reviewer of Sadhana- Journal of Indian Academy of Sciences.
- Vice-chair, IEEE-IISc, Women in Science and Engineering Affinity Group.
- Member of IISc Notebook Drive to teach government school children.