

PRACHI SINGH

PhD Scholar

LEAP Lab

Electrical Engineering

Indian Institute of Science, Bangalore

@ prachisingh@iisc.ac.in

leap.ee.iisc.ac.in/prachi/

in linkedin.com/in/prachi-singh-14115168/

OBJECTIVE

As a PhD scholar, I am looking for research internship where I would be able to align my skills and interest in building a useful product and develop a strong connection with my team and organization as a whole.

RESEARCH INTERESTS

Speaker Diarization, Machine Learning, Variational Inference, Metric Learning, Dialog system understanding using different neural architectures

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)
Indian Institute of Science, Bangalore	
B.Tech	2011 - 2015
Electronics & Telecommunication	(CGPA : 8.67)
College of Engineering, Pune	
XII Std.	2011
Maharashtra State Board	(93.67%)
X Std.	2009
Maharashtra State Board	(92%)

Courses

- Machine Learning for Signal Processing
- Computational Methods of Optimization
- Speech Information Processing
- Stochastic Models and Applications
- Detection and Estimation Theory

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.
- Validation of issues in modules (ECU) present in automobile.

ACHIEVEMENTS

- Interview published in theinterviewportal.com for career guidance.
- ISCA Travel Grant for Interspeech, 2019
- Runner-up in "Second DIHARD Challenge 2019", April 2019
- Late Shri Manoharbhay Patel Memorial Gold Medal in XII Std
- Dhirubhai Foundation Scholarship in XII Std

THESIS WORK

Research advisor: Dr. Sriram Ganapathy

Self-supervised Speaker Diarization

- This work involves learning representations using clustering based loss. The task is self-supervised because we learn the representations using the clustering output given by the Agglomerative Hierarchical Clustering algorithm to make the representations more speaker discriminative [Submitted in Interspeech 2020].

Speaker Diarization using Posterior Scaled VB-HMM

- The project involves identifying different speakers present in different segment of a given audio recording from DIHARD dataset which has challenging scenarios including restaurants, clinical interviews, mother child conversations etc. using posterior scaled Variational Bayes - Hidden Markov Model. The work is published in Interspeech, Graz, Austria 2019.

Diarization for multi-speaker test conditions in SRE 2018 challenge

- SRE 2018 challenge involved test conditions with multiple speaker. We perform diarization to extract individual speaker segments to score against the enrollment. This work is published in ICASSP 2019.

PUBLICATIONS

- P. Singh, Harsha Vardhan MA, S. Ganapathy, A. Kanagasundaram, "LEAP Diarization System for the Second DIHARD Challenge", INTERSPEECH 2019.
- S. Ramoji, P. Krishnan, B. Mysore, P. Singh, S. Ganapathy, "LEAP System for SRE19 Challenge - Improvements and Error Analysis", Speaker Odyssey Workshop 2020.
- 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.

WORKSHOPS AND CONFERENCES

- 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

TEACHING EXPERIENCE

- Teaching Assistant for course Deep learning theory and Practice - Center for Continuing Education IISc (Spring 2020- Present)
- Teaching Assistant for course Machine Learning and Signal Processing (Fall 2019)