

Shruti Rajendra Kshirsagar

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RESEARCH INTEREST

Deep Learning, Machine Learning, Speech Processing, Signal Processing, Emotion Recognition, Artificial Intelligence

EDUCATION

Institut national de la recherche scientifique, Montreal, Canada

PhD in Telecommunications | GPA: 4.0/4.3

Advisor: Dr. Tiago H. Falk (Director, MuSAE Lab)

January 2018 – Present

Mumbai University, India

Masters in Electronics and Telecommunication Engineering

Specialization: Signal Processing | CGPA: 9.08/10

Advisor: Dr. Preeti Rao (Professor, IIT Bombay)

August 2014 – July 2016

Mumbai University, India

Bachelors in Electronics and Telecommunication Engineering

Percentage: 72.64% (First Class with Distinction)

August 2010 – May 2014

PUBLICATIONS

- A. Avila, S. Kshirsagar, A. Tiwari, D. Lafond, D. O'Shaughnessy, and T. Falk, "Speech-based stress and emotion classification based on modulation spectral features and convolution neural networks", EUSIPCO 2019, Spain.
- S. Barhate, S. Kshirsagar, N. Sanghvi, K. Sabu, P. Rao and N. Bondale "Prosodic Features of Marathi News Reading Style", Proc. of IEEE TENCON, Nov 2016, Singapore.
- P. Rao, H. Mixdorff, I. Deshpande, N. Sanghvi and S. Kshirsagar "A Quantitative Study of Focus Shift in Marathi", Proc. of Speech Prosody, May 2016, Boston, U.S.A.

EXPERIENCE

MITACS Accelerate Research Intern | Thales Canada, Quebec

Supervisor: Dr. Daniel Lafond

- Multi-modal speech emotional (stress) recognition using LSTM.
- Stress detection from speech signal.
- Investigated the effects of different noise types and noise levels on the speech data.
- Employed domain adaptation for cross-language emotion detection

May 2018 – September 2018

Research Assistant | Nanyang Technological University, Singapore

Supervisor: Prof. Chng Eng Siong (Head, Speech and Language Group)

- Worked on "Analysis of prosodic pattern for the speech emotion recognition".
- Analyzed pitch patterns for the different emotions.
- Conducted experiments to investigate novel features for speech emotion recognition using DNN.

May 2017 – August 2017

Masters Dissertation Thesis | Indian Institute of Technology Bombay, India

Supervisor: Prof. Preeti Rao (Head, Digital Audio and Processing Lab)

- Studied the pitch, intensity and duration of utterances using techniques such as one-way ANOVA.
- Identified the acoustic correlates of stress in Marathi language using MATLAB and PRAAT.
- Modelled these acoustic features in different lexical stress locations and focus types.

August 2015 – June 2016

Summer Intern | Doordarshan Kendra (National Television Channel, India)

- Field study of signal processing equipment used in broadcasting.
- Understood and visualized the signals at each stage of transmission

July 2013

Private Tutor

May 2015 – December 2016

Taught following courses to undergraduate engineering students:

Signal and Systems, Random Signal analysis, Linear Algebra, Probability and Random Variables

TECHNICAL PROFICIENCY

Python, TensorFlow, PyTorch, Praat, MATLAB, Linux

RELEVANT COURSES

Applied Machine Learning, Learning Representations, Verbal Communications

PRESENTATIONS

- Poster presentation on “Prosodic Features of Marathi News Reading style” at TENCON- International Technical Conference of IEEE Region 10 (2016), Singapore.
- Poster presentation on “Multimodal emotion recognition "in the wild” at STARaCOM- Industrial meetup (2019), Montreal, Canada.

EXTRA-CURRICULAR:

Academic

- Exchange student at McGill University. *Fall 2018*
- Exchange student at University de Montreal *Spring 2018*
- Took advanced courses in speech processing at IIIT Hyderabad, India *January 2017-December 2017*
- Formulated solutions for engineering exams held between years 2011 – 2014 by Mumbai University *February 2015*

Honors & Awards

- MITACS Accelerate Internship Grant *Summer 2018*
- MuSAE Lab Grant *January 2018 – December 2021*
- INRS International Student Scholarship *January 2018 – December 2021*
- NTU Singapore ‘Tamasek Lab Research Grant’ for International Internship *Summer 2017*
- IIIT Hyderabad Language Technologies Research Center Lab Grant *January 2017 – December 2017*
- IIT Bombay Digital Audio and Processing Lab Grant *April 2016 – June 2016*
- Graduate Aptitude Test in Engineering (GATE) Scholarship for Masters *August 2014 – July 2016*

Organization

- Association for the Advancement of Affective Computing
- IEEE Signal Processing Society
- IEEE Women in Engineering
- IEEE Young Professionals
- Women in Machine Learning