

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

January 2018 – Present

PhD in Telecommunications | GPA: 4.0/4.3

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

Mumbai University, India

August 2014 – July 2016

Masters in Electronics and Telecommunication Engineering

Specialization: Signal Processing | CGPA: 9.08/10

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

Mumbai University, India

August 2010 – May 2014

Bachelors in Electronics and Telecommunication Engineering

Percentage: 72.64% (First Class with Distinction)

PUBLICATIONS & POSTER PRESENTATIONS

- 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.
- Gaballah, Amr, Anderson Avila, Joao Monteiro, Parth Tiwari, Shruti Kshirsagar, and Tiago H. Falk. "Development of the INRS-EMT Scene Classification Systems for the 2020" DCASE challenge 2020.
- Tiwari, P., Jain, Y., Avila, A., Monteiro, J., Kshirsagar, S., Gaballah, A., & Falk, T. H. Modulation Spectral Signal Representation and I-vectors for Anomalous Sound Detection, DCASE challenge 2020.
- 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.
- 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.
- Poster presentation on "Exploring Domain Adaptation for Monolingual and Cross-lingual Speech Emotion Recognition"- at ACM Canadian Celebration of women in computing conference (2019), Toronto, Canada.

EXPERIENCE

MITACS Accelerate Research Intern | Thales Canada, Quebec

May 2018 – September 2018

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

Research Assistant | Nanyang Technological University, Singapore

May 2017 – August 2017

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.

Masters Dissertation Thesis | Indian Institute of Technology Bombay, India

August 2015 – June 2016

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.

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

July 2013

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

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 (Deep Learning), Verbal Communications(Speech processing).

EXTRA-CURRICULAR:

Academic

- Exchange student at McGill University.
- Exchange student at University de Montreal
- Took advanced courses in speech processing at IIIT Hyderabad, India
- Formulated solutions for engineering exams held between years 2011 – 2014 by Mumbai University

Fall 2018
Spring 2018
January 2017-December 2017
February 2015

Honors & Awards

- MITACS Accelerate Internship Grant
- MuSAE Lab Grant
- INRS International Student Scholarship
- NTU Singapore ‘Tamasek Lab Research Grant’ for International Internship
- IIIT Hyderabad Language Technologies Research Center Lab Grant
- IIT Bombay Digital Audio and Processing Lab Grant
- Graduate Aptitude Test in Engineering (GATE) Scholarship for Masters

Summer 2018
January 2018 – December 2021
January 2018 – December 2021
Summer 2017
January 2017 – December 2017
April 2016 – June 2016
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