Vijayakrishna Naganoor

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Education

University of Michigan, Ann Arbor *Sept 2017 – Apr 2019*
Master of Science in Electrical and Computer Engineering
Major: Machine Learning and Signal Processing

National Institute of Technology Karnataka, India *Aug 2013 – Apr 2017*
Bachelor of Technology
Major: Electrical and Electronics Engineering *GPA 8.87/10.0*

Professional Experience

SPIRE Lab, Indian Institute of Science *August 2016 – December 2016*
Reasearch Assistant
Analysis of Indian Spoken Language pronunciation using suprasegmental features such as Rhythm and Prosody

- Improvised Language Classification system for Indian languages with new rhythm and prosody based features.
- Developed methods for automatic prosodic event detection for Indian English by constructing new prosodic features to decrease the error-rate by 10 percent.

VIVA Lab, University of Ottawa *May 2016 – August 2016*
Summer Internship
Object detection system to be used in driver assistance and smart video surveillance applications

- Worked on Leading-Car Detection system using Convolutional Neural Networks on the popular vehicular database - TME Motorway Dataset using the Tensorflow framework.
- Constructed synergy constraint based CNN training paradigm for obtaining features which are discriminative for car and pedestrian detection.

Publications

- **Selfie Detection by Synergy-Constriant Based Convolutional Neural Network** [pdf][code]
  12th IEEE International Conference on Signal Imaging Technology and Information Systems (SITIS), 2016.
- **Word Boundary Estimation for Continuous Speech Using Higher Order Statistical Features** [pdf]
  35th IEEE International Conference TENCON , 2016 Technologies for Smart Nation

Projects

- **Speaker Count Estimation using Deep Learning Methods**
  Addressed the challenging task of counting the number of speakers present in a given conversation which can be helpful in improving speaker diarization and in audio forensics.
- **Music Genre Classification**
  Explored the usage of Deep Convolutional Neural Networks in large scale genre classification. Built a classifier to classify an audio segment not only into a genre but also into corresponding 30 sub-genres.

Skills and Course work

Related Coursework : Pattern Recognition and Machine Learning, Advanced Digital Signal Processing, Graph Theory

Programming languages and tools: Python, Matlab, OpenCV, Tensorflow.

Notable achievements

- Awarded **Mitacs Globalink Scholarship** for Summer Research Internship in Canada.
- Awarded a Summer Research Fellowship by the **Indian Academy of Sciences**, 2015
- Recipient of the National Talent Search Examination (**NTSE**) scholarship, 2009-present;
  (Awarded to *top 750 students among 0.5 million* from all over the country)
- Chaired **Signal Processing Society, IEEE-NITK Student Chapter**