

K Venkata Vijay Girish

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Date of Birth

23-10-1985

Research Interests

- Machine Learning, Data Analytics and Audio Signal Processing
- Sparse Signal Processing, Incoherent Dictionary Learning and Adaptation, Image and Video Processing
- Machine Listening: Audio Source Classification pertaining to Speaker, Background Noise and Language Classification, Source Separation, Audio Signal Analysis and Detection of Transitions Processing

Education

Currently pursuing PhD, Systems and Signal Processing, August 2010- Present, expected January 2017
Department of Electrical Engineering, Indian Institute of Science, Bangalore, GPA: 6.0/8.0

– *Research Advisors: Prof. A. G. Ramakrishnan, Department of Electrical Engineering, Indian Institute of Science and Dr. T. V. Ananthapadmanabha, Voice and Speech Systems, Bangalore*

B.Tech., Electrical and Electronics Engineering, August 2004- May 2008
National Institute of Technology Karnataka, Surathkal, GPA: 7.75/10.00

Class- 10+2, CBSE, May 2003
Kendriya Vidyalaya No.-2, Kharagpur, Percentage: 82.0

Class- 10, CBSE, May 2001
Kendriya Vidyalaya No.-2, Kharagpur, Percentage: 75.8

Research Publications

Conference publications

Published:

- Sayan Ghosh, K V Vijay Girish, T.V. Sreenivas, *Relationship between Indian Languages Using Long Distance Bigram Language Models*, Proc. International Conference on Natural Language Processing (ICON 2011), Dec 16-19, 2011, Chennai, India, pp. 104-113
- Vikram Ramesh Lakkavalli, K V Vijay Girish, A G Ramakrishnan, *Sub-band Envelope Approach to Obtain Instants of Significant Excitation in Speech*, Proc. National Conference on Communications (NCC 2012), Feb 3-5, 2012, Kharagpur, India, pp. 19
- Vikram R L, K V Vijay Girish, Harshavardhan S, A G Ramakrishnan, T V Ananthapadmanabha, *Sub-band Analysis of Linear Prediction Residual for the Estimation of Glottal Closure Instants*, Proc. IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2014), May 4-9, 2014, Florence, Italy
- K V Vijay Girish, A G Ramakrishnan and T V Ananthapadmanabha, *Hierarchical classification of speaker and background noise and estimation of SNR using sparse representation*, Interspeech 2016, September 8-12, 2016, San Francisco

Submitted:

- K V Vijay Girish, Veena Vijai and A G Ramakrishnan, *Relationship between spoken Indian languages by clustering of long distance bigram features of speech*, submitted to INDICON 2016
- K V Vijay Girish, T V Ananthapadmanabha and A G Ramakrishnan, *Cosine similarity based dictionary learning and source recovery for classification of diverse audio sources*, submitted to INDICON 2016

Technical Reports

- T V Ananthapadmanabha, K V Vijay Girish, A G Ramakrishnan, *Detection of transitions between broad phonetic classes in a speech signal*, arXiv:1411.0370 [cs.SD]
- K V Vijay Girish, A G Ramakrishnan and T V Ananthapadmanabha, *Adaptive dictionary based approach for background noise and speaker classification and subsequent source separation*, arXiv:1609.09764 [cs.SD]

Technical Skills

- Relevant Subjects:
Matrix Theory, Linear and Non Linear Optimization, Probability Theory, Optimization, Advanced Digital Signal Processing, Pattern Recognition and Neural Networks, Data Mining, Compressive Sensing and Sparse Signal Processing, Speech Information Processing, Automatic Speech Recognition Algorithms
- Programming languages known: C, C++, Matlab, VHDL
- Operating system: Worked on Windows XP and Linux

Project Mentorship

- Veena Vijai, from Birla Institute of Technology and Science, Pilani - K. K. Birla Goa Campus on Relationship between spoken Indian languages by clustering of long distance bigram features of speech, May-July, 2016
- B Shubashree, from SSN College of Engineering, Chennai on Unsupervised background noise change identification using dictionary learning, June- August, 2016

Teaching Experience

Linear and Nonlinear Optimization offered by Prof. Muthuvel Arigovindan at Indian Institute of Science, Bangalore during August-December, 2013: Responsibilities include conducting tutorial classes

Speech Information Processing offered by Prof. A G Ramakrishnan at Indian Institute of Science, Bangalore during January-May, 2014: Responsibilities include preparing assignments and projects

Matrix Theory offered by Prof. A G Ramakrishnan at Indian Institute of Science, Bangalore during August-December, 2014: Responsibilities include preparing assignments, clearing doubts, evaluation and grading of students.

Technical Experience

- Work experience of 2 years from August- 2008 to July- 2010 which includes 1st year as Graduate Engineer Trainee and 2nd year as a Senior Engineer in Relay and Integrated Solutions, Larsen and Toubro Limited, Mumbai
- Industrial Training: Inplant Practical Training at the Bharat Heavy Electricals Limited, Electronics Division, Bangalore (May-June 2006)

Languages Known:

- English, Hindi and Telugu

October 13, 2016