K Venkata Vijay Girish

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Date of Birth

23-10-1985

Research Interests

- Machine Listening: Source Separation, Audio Signal Analysis, Language / Speaker Classification, Detection of Transitions and Audio Source Classification in mixed signals
- Pattern Recognition, Machine Learning, Sparse Coding and Compressive sensing
- Signal Processing and its applications, Image Processing

Education

Currently pursuing PhD, Systems and Signal Processing, August 2010- Present, expected July 2016
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*, To be presented in Interspeech 2016, September 8-12, 2016, San Francisco

Technical Reports

- T V Ananthapadmanabha, K V Vijay Girish, A G Ramakrishnan, *Detection of transitions between broad phonetic classes in a speech signal*, arXiv, Submitted on 3 Nov 2014
- K V Vijay Girish, T V Ananthapadmanabha, A G Ramakrishnan, *A dictionary learning and source recovery based approach to classify diverse audio sources*, arXiv, Submitted on 27 Oct 2015

Technical Skills

- Relevant Subjects:
  During B.Tech *August 2004 - May 2008:*
  Digital System Design, Microprocessors, Computer Organization and Architecture
  During PhD *August 2010- current:*
  Matrix Theory, Linear and Non Linear Optimization, Probability Theory, Convex Optimization, Advanced Digital Signal Processing, Pattern Recognition and Neural Networks, Machine Learning, Data Mining, Compressive Sensing and Sparse Signal Processing, Time Frequency Analysis, Speech Information Processing, Automatic Speech Recognition Algorithms, Digital Image Processing
- Programming languages known: *C, C++, Matlab, VHDL , 8051 Assembly language, SQL, Latex, Java and Foxpro*
- Softwares used: *Maxwell, PSpice, Xilinx, Modelsim, Matlab, Simulink, Praat and Latex*
- Operating system: *Worked on Windows XP and Linux*
- Others: *Microsoft Office*

Academic Achievements:

- Got through AIEEE 2004 with an All India Rank of 4525 and State Rank (West Bengal) of 53
- Secured an All India Rank of 5439 in IIT-JEE 2004
- Got through GATE 2010 (Electrical Engineering) with 98.8 percentile
- Has been among top 3 students of the school consistently
- Distinctive performance in 2nd National Science Olympiad in 2000

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)

July 14, 2016