

# CURRICULUM VITAE

## Personal Information

### Jagannath Haridas Nirmal

Professor,  
Department of Electronics Engineering  
K.J. Somaiya College of Engineering,  
(A Constituent Academic Unit of SVU)  
Vidyavihar, Mumbai, Maharashtra- 400077

Phone no: (Off.): +91-022-66449175  
9167130111

Email: [jhnirmal@somaiya.edu](mailto:jhnirmal@somaiya.edu)  
[jhnirmal1975@gmail.com](mailto:jhnirmal1975@gmail.com)

## Academics Information

- Ph.D. on “Novel Feature Extraction and Mapping Function For Voice Conversion” in Electronics Engineering from Sardar Vallabhbhai National Institute of Technology, Surat, Gujarat. India.
- M. Tech (Electronics Engineering) from V.J.T.I. Mumbai with 8.95 CPI on the scale of 10.
- B.E. (Electronics Engineering) from S.G.G.S I.E&T Nanded with 73.46 %.

Degree	University/Board	Major Subject	Year
Ph.D.	SVNIT, Surat	Electronics Engineering	2015
M.Tech	VJTI, Mumbai	Electronics Engineering	2008
B.E.	SGGSIE&T, Nanded	Electronics Engineering	1999

## Invited Lecture in special courses and tutorials

- Delivered lectures on “Data Analytics & Machine Learning” at K J Somaiya College of Engineering on 23<sup>th</sup> March 2017 organized by Department of Computer, KJSCE Mumbai.
- Delivered two lectures on “Applications of Machine Learning in Biomedical Engineering” in AICTE sponsored one week QIP on "Recent Trends in Biomedical Signal Processing" during 16<sup>th</sup>-21<sup>st</sup> Jan 2017 organized by Department of Electronics Engineering, VJTI Mumbai.

- Delivered two lectures on Pattern Recognition Using ANN and GMM in STTP on Speech and Language Processing organised by Department of Electronics and Telecommunication Engineering on 12<sup>th</sup> January 2017 at XIE Mumbai.
- Delivered lecture series on “Pattern Recognition, Univariate and Gaussian Distribution” in TEQIP Short term course on Statistical Methods on 22<sup>nd</sup> December 2016 organised by Department of Computer Engineering, Sardar Vallabhbhai National Institute of Technology Surat.
- Delivered lecture series on “Gaussian Mixture Model and applications on 22<sup>nd</sup> December 2016 organised by Department of Computer Engineering, Sardar Vallabhbhai National Institute of Technology Surat.
- Delivered lecture sessions on “Neural Network and applications with Demos ” organized by Department of Electronics Engineering, K.K Wagh College of Engineering, Nasik, on 09 October 2016.
- Delivered lecture sessions on “Applications and Case studies of Speech Processing” at SVCE on 30 September 2016 organized by IEEE Bombay Section.
- Delivered lectures on “1) Research what and why? 2) Applications of Neural Network in Speech Processing” at K J Somaiya College of Engineering on 19<sup>th</sup> August 2015 organized by our ISTE Chapter KJSCE.
- Delivered lecture sessions on “Applications of Neural Network in Speech Processing” at R.H. Sapat College of Engineering Nasik on 1 August 2015 organized by IEEE Bombay Section.
- Delivered lecture sessions on “Applications of Neural Network in Speech Processing” at G.N.Sapkal College of Engineering Nasik on 31 July 2015 organized by IEEE Bombay Section.
- Delivered lecture sessions on “Digital Signal processing and its applications” at Sandeep Institute of Technology and Research Centre Nasik on 31 July 2015 organized by IEEE Bombay Section.
- Delivered lectures on “Applications of Neural Network in speaker and person recognition and research opportunities” in IET sponsored Short Term Training Program on Research Opportunities in Speech and Image Processing and Neural Network on 17<sup>th</sup> July 2015 organised by Department of Electronics and Telecomm engineering Mukesh Patel School of Technology Management & Engineering.
- Delivered lecture sessions on “Digital Signal processing and its applications” organized by M.H. SabooSiddik College of Engineering on 25 March 2015.
- Delivered lecture sessions on “Artificial Neural Network and Applications” in TEQIP Sponsored Faculty Development Programme on Signal Processing and applications organized by V.J.T.I Mumbai, on 25 Feb 2015.
- Delivered lecture sessions “Application of Signal and Image Processing” in Department of Computer Engineering, K J Somaiya College of Engineering on 18 Feb 2015.

- Delivered lecture sessions and one lab session on “Application of Neural Network in Speech Processing” in A Five-day short Term training programme on “Audio, Speech and Signal Processing” under (TEQIP II) at S.V. National Institute of Technology, Surat on 7-11 June 2014.
- Delivered lecture sessions on “Applications of Signal Processing with Demos ” organized by Department of Electronics Engineering, K.K Wagh College of Engineering, Nasik, on 2 March 2014.
- Delivered lecture sessions on “Speech Processing: Fundamental to Advances and Applications” in Short Term Training Programme on Recent Trends on Signal Processing organized by VIT, Mumbai on 14 and 15 August 2012.
- Delivered lecture on “Signal Processing with Demos” in International Conference & Workshop on Emerging Trends in Technology 2012 (ICWET 2012)organized by Thakur College of Engineering, Mumbai on 24<sup>th</sup> Feb 2012.
- Delivered lecture sessions on “Signal Processing with Demos” in RESONANCE 2013 organized by Don Bosco Institute of Technology, Kurla, Mumbai on 14 March 2012.
- Delivered lecture on “Application of Signal Processing with Demos” at Electronics Engineering at SPIT Andheri, Mumbai on 9<sup>th</sup> March 2013.
- Delivered lecture sessions and a laboratory session on “MATLAB: Fundamental to Advances with Demos” in Short Term Training Programme on wireless Communication organized by Don Bosco Institute of Technology, Mumbai on 14 March 2013.
- Delivered lecture sessions and one lab session on “Application of Speech Processing “Organized by Department of Electronics and Telecommunication Engineering ITM universe Vadodara, Gujarat on 6<sup>th</sup> September 2013.
- Delivered lecture sessions and one lab session on “Application of Neural Network in Speech Processing” in A Five-day short Term training programme on “Machine Learning” under (TEQIP II) at S.V. National Institute of Technology, Surat on 17-21 June 2013.
- Lecture Delivered at K. J. Somaiya college of engineering, Mumbai under ISTE KJSCE chapter on “Research: What and why?” on 17<sup>th</sup> March 2012.

## Publication

- **International Journals**

- [1] Girish Gidaye, Jagannath Nirmal Mondher Frikha, Kadria Ezzine, “Application of Glottal Flow Descriptors for Pathological Voice Diagnosis”, **International Journal of Speech Technology**, Springer US, vol..... , pp....., 2019 (SCI listed)

- [2] Savitha S Upadhyaya, AN Cheeran, Jagannath Nirmal, “Discriminating Parkinson diseased and healthy people using modified MFCC filter bank approach”, **International Journal of Speech Technology, Springer US**, vol. 22, pp. 1021-1029, 2019 (SCI listed)
- [3] Nikunj R Lad, Jagannath Nirmal Kshipra D Naikare, “Total variability factor analysis for dysphonia detection”, **International Journal of Speech Technology, Springer Singapore**, vol. 11, pp. 67-74, 2019 (SCI listed)
- [4] Savitha S Upadhyaya, AN Cheeran, Jagannath Nirmal, “Multitaper perceptual linear prediction features of voice samples to discriminate healthy persons from early stage Parkinson diseased persons”, **International Journal of Speech Technology, Springer**, vol. 21, pp. 391-399, 2018 (SCI listed)
- [5] Savitha S Upadhyaya, AN Cheeran, Jagannath Nirmal, “Thomson Multitaper MFCC and PLP voice features for early detection of Parkinson disease”, **Biomedical Signal Processing and Control, Elsevier Publication**, vol. 46, pp. 293-301, 2018 (SCI listed)
- [6] Jagannath Nirmal, Mukesh Zaveri, Suprava Patnaik and Pramod Kachare, “Novel approach of MFCC based alignment and WD-residual modification for voice conversion using RBF”, **Neurocomputing, Elsevier Publication**, vol. 237, pp. 39-49, 2017 (SCI listed)
- [7] Jagannath Nirmal, Suprava Patnaik, Mukesh Zaveri, Pramod Kachare “Voice Conversion System Using Salient Sub bands and Radial Basis Function” **Neural Computing and Application, Springer**, vol. 27, pp. 2615-2628, 2016 (SCI Listed)
- [8] Jagannath Nirmal, Mukesh Zaveri, Suprava Patnaik and Pramod Kachare, “Voice Conversion Using General Regression Neural Network”, **Applied Soft Computing, Elsevier Publication**, vol. 24, pp. 1-12, 2014 (SCI listed)
- [9] Jagannath Nirmal, Suprava Patnaik, Mukesh Zaveri, Pramod Kachare “Voice Conversion System Using Salient Sub bands and Radial Basis Function” **Neural Computing and Application, Springer**, ISN (0941-0643), pp. 1-14, 2015 (SCI Listed)
- [10] Jagannath Nirmal, Mukesh Zaveri, Suprava Patnaik and Pramod Kachare, “MFCC Based Speech Alignment and Wavelet Decomposed Residual Conversion using Radial Basis Function”, **Neurocomputing Elsevier**  
DOI (<http://dx.doi.org/10.1016/j.neucom.2016.07.048>)
- [11] Jagannath Nirmal, Mukesh Zaveri, Suprava Patnaik and Pramod Kachare, “A Novel Voice Conversion Approach Using Admissible Wavelet Packet Decomposition”, **EURASIP Journal on Audio, Speech, and Music Processing, Springer**, vol. 28 issue 1, pp. 1-10, 2013. (SCI listed)

- [12] Jagannath Nirmal, Suprava Patnaik, Mukesh Zaveri, and Pramod Kachare “Complex Cepstrum Voice Conversion Using Radial Basis Function”, **ISRN: Signal Processing, Hindawi**, vol. 2014, pp. 1-13, 2014.
- [13] J. H. Nirmal, Suparva S. Patnaik, and Mukesh A. Zaveri, “Line Spectral Pairs based Voice Conversion using Radial Basis Function,” **International Journal on Signal and Image Processing, IJSIP**, vol. 4, no. 2, pp. 26-33, 2013.
- [14] J.H.Nirmal, SupravaPatnaik, M.A.Zaveri; “Cepstrum Based Transformation Using ANN”, International Conference in Computational Intelligence (ICCIA) 2011 Proceedings published in **International Journal of Computer Applications (IJCA)**.vol.2 pp 15-18, 2011.
- [15] J H Nirmal, Sanjay Gandhe, “Performance of Different Techniques for Text Independent Speaker Identification in Noisy Environment”, **International Journal of Computer Network and security**, vol. 2, no. 7, 2010

- **International and National Conferences**

- [1] JagannathNirmal, Nikunj R Lad, Kshipra D Naikare, ”Classification of voice disorders using i-Vector analysis”, Proceedings of International Conference on Communication information and Computing Technology (ICCICT 2018), pp 1-7, IEEE, February 2-3, 2018, Mumbai, India.
- [2] Jagannath Nirmal, Savitha S Upadhya, AN Cheeran, ”Statistical comparison of jitter and shimmer voice features for healthy and Parkinson affected persons”, Proceedings of Second International Conference on Electrical, Computer and Communication Technologies (ICECCT 2017), pp 1-6 , IEEE, February 16-17, 2017, Coimbatore, Tamil Nadu, India.
- [3] Jagannath Nirmal, AnkitaChadha, ”A full band adaptive harmonic model based speaker identity transformation using radial basis function”, Proceedings of 11th International Conference on Intelligent Systems and Control (ISCO),pp 217-223, IEEE, January 5-0036, 2017, Coimbatore, Tamil Nadu, India.
- [4] Jagannath Nirmal, SuparvaPatnaik and Mukesh Zaveri, ”Voice Transformation using Radial Basis Function”, Proceedings of Third International Conference on Recent Trends in Information, Telecommunication and Computing (ITC 2012), pp 271-276 Springer LNEE, August 03-04, 2012, Bangalore, India.
- [5] J.H.Nirmal, PramodKachare, S.S.Patnaik, M.A.Zaveri, ”CepstrumLiftering Based VC using ANN and GMM”, Proceedings of Second IEEE International Conference on Communication and signal processing (ICCSP 2013), pp 570-575, April 11-13 2013, Vengamukkapalem, AP, India.

- [6] Nirmal J. H., Suparva Patnaik, Mukesh A. Zaveri and Pramod Kachare, "Multi-scale Speaker Transformation using Radial Basis Function", Proceedings of International Conference on Computational Intelligence: Modeling Techniques and Applications (CIMTA 2013), Procedia, Vol 10, pp 311–319 Sep. 27-28, 2013, Kalyani, W.B., India.
- [7] Ankita N. Chadha, J.H Nirmal and P. Kachare," A Comparative Performance of Various Speech Analysis-Synthesis Techniques", Proceeding of Third International Conference on Communication and Information Processing (ICCIP 2014), NUS Singapore , June 24-26, 2014 published in International Journal of Signal Processing Systems vol. 2, No. 1 June 2014.
- [8] Ankita N. Chadha, Jagannath H. Nirmal, Mukesh A. Zaveri, "A comparison of Multi-layer Perceptron and Radial Basis Function Neural Network in the Voice Conversion framework", IEEE Third International Conference on Advances in Computing, Communications and Informatics (ICACCI-2014), GCET Noida Delhi, September, 24-27 pp,1045-1052.
- [9] S.A. Khan, A.S. Thosar, J.H. Nirmal, V. S. Pande, "A unique approach in text independent speaker recognition using MFCC feature sets and probabilistic neural network", IEEE 8<sup>th</sup>International Conference on Advances in Pattern Recognition (ICAPR), Indian Statistical Institute Kolkatta during January 4-7, 2015, pp. 1-6, 2015.
- [10] D.V.Thombare, J.H Nirmal, "Human Detection and Tracking using Kalman Filter and background subtraction technique", at 19th IEEE International Conference on Intelligent Agent & Multi-Agent Systems (IAMA 2009) during 22-24 July 2009 organized by the Department of Computer Science & Engineering, AarupadaiVeeduInstitute of Technology Chennai.
- [11] J.H Nirmal, A.N Cheeran "Vehicle Navigation Using Kalman Filter" at National Conference on Algorithms Organized by: ShriDattaMeghe College of Engineering, Bandra(w), Mumbai – 400050 during 16-17<sup>th</sup> May 2007
- [12] J.H Nirmal, A.N Cheeran, "Radar Target Detection and Tracking" at International Conference on Digital Factory (ICDF 2008) during July 11- 13th Organized by: Coimbatore Institute of Technology, Jointly with Business Innovation Research Center (BIRC), Charlton College of Business, UMassD, USA.
- [13] J.H Nirmal, A.N Cheeran "Linear and Non Linear Target tracking by Kalman and Extended Kalman Filter" at National Conference on Algorithms Organized by: Fr. Conceicao Rodrigues College of Engineering, Mumbai, India during 28 and 29 Dec 2007.
- [14] Pramod Kachare, A. N. Cheeran, Jagannath Nirmal, "Voice conversion: Wavelet based residual selection" IEEE Fourth International Conference on Advances in Computing, Communications and Informatics (ICACCI) SCMS, Kochi, Kerala during 13-15 August 2015.
- [15] Apoorva Kayal, J H Nirmal, "Multilingual Vocal Emotion Recognition and Classification Using Back-propagation Neural Network 2<sup>nd</sup> International Conference on Communication System (ICCS2015) Organized by Birla Institute of Technology, Pilani.

- [16] Amit Buyan, J H Nirmal, Comparative Study Of Voice Conversion Framework With Line Spectral Frequency And Mel- Frequency Cepstral Coefficients As Features Using Artificial Neural Networks International Conference on Computers, Communications, and Systems organized by S T Hindu College of Engineering sponsored by IETE.
- [17] Ashwini Visave Jagannath Nirmal, "Voice Classifier for glottal pathology detection from Glottal to Noise Excitation ratio and pitch IEEE Fourth International Conference on Advances in Computing, Communications and Informatics (ICACCI) SCMS, Kochi, Kerala during 13-15 August 2015.

### **Memberships in National Committees/Bodies**

- Life time member of Indian Society for Technical Education ISTE since 2003.

### **Editor/Member of editorial board**

- Session chair for 3<sup>rd</sup> International conference on Advances in Computing, Communication and Informatics (ICACCI 2014) held in New Delhi in 2014.
- Session chair for International Conference & Workshop on Emerging Trends in Technology (ICWET 2012) held in Mumbai in 2012.
- Session chair for student paper presentation competition (Abhiyantriki 2015)organised by IEEE student chapter K J Somaiya College of Engineering on 29<sup>th</sup> September 2015.

### **Reviewer for International Journals (SCI/SCIE/IE) and Conferences**

- IEEE Assess (IEEE Journal)
- International Journal of Speech Technology (Springer)
- Neurocomputing (Elsevier )
- Expert System and Applications (Elsevier).
- Signal Processing, (Elsevier)
- Speech Communication
- Advances in Signal Processing at (EURASIP).
- Worked as a reviewer for ICACCI 2014, ICCIPS 2014, ICWET 2013, IBSS 2015 many more.

### Workshop and Panel organization, invited panellist

- Coordinated ISTE approved Two Weeks Short Term Training Programme on wavelet transform applications: hands at K. J. Somaiya College of Engineering, Mumbai on 19<sup>th</sup> December to 23<sup>th</sup> December 2016.
- Coordinated two day workshop on wavelet transform and applications at K. J. Somaiya College of Engineering, Mumbai on March 18-19, 2016.
- Coordinated an ISTE approved STTP on Speech, Music Processing and Machine Learning: Fundamentals, Applications and Trends at K. J. Somaiya College of Engineering, Mumbai on December 29, 2014 to January 3, 2015.
- Organized a Short term training programme on Broadband Communication at K. J. Somaiya College of Engineering, Mumbai on 13<sup>th</sup> June to 25<sup>th</sup> June 2006.
- Coordinated ISTE approved Two Weeks Short Term Training Programme on Embedded System Design: A unified Hardware and software approach at K. J. Somaiya College of Engineering, Mumbai on 13<sup>th</sup> June to 25<sup>th</sup> June 2005.
- Organised orientation program on “Advanced Optimization Techniques” on 6<sup>th</sup>, 7<sup>th</sup>, 12<sup>th</sup> and 13<sup>th</sup> February 2014 at K J Somaiya College of Engineering Mumbai.
- Organized orientation program on “Advanced Optimization Techniques” on 6<sup>th</sup>, 7<sup>th</sup>, 12<sup>th</sup> and 13<sup>th</sup> February 2014 at K J Somaiya College of Engineering Mumbai.
- Coordinated Virtual Lab Training Program for all faculties of K. J. Somaiya College of Engineering, Mumbai from 21 April to 23 April 2015.
- Coordinated Virtual Lab Training Program for all UG and PG students (All Braches) of K. J. Somaiya College of Engineering, Mumbai from 31 August to 15 September 2015.

### Short Term Traing Program Attended

- Winter School on Speech and Audio Processing (Wissap'15) at DA-IICT, Gandhi-Nagar during 3<sup>rd</sup> Jan to 7<sup>th</sup> Jan 2015.
- Winter School on Speech and Audio Processing (Wissap'14) at IIIT Hyderabad during 21<sup>st</sup> to 27<sup>th</sup> Jan 2014
- MHRD AICTE STTP on Linear algebra and Wavelet transform for one week during 29 Nov 2010 to 3<sup>rd</sup> Dec 2010 organized by Department of Mathematics N.I.T Calicut.
- MHRD AICTE STTP on Advanced Recent Trends in signal and Image Processing 29<sup>th</sup> Dec 2012 to 13<sup>th</sup> Jan 2013 organized by Department of Electronics, S.G.G.S Institute of Engineering and Technology, Nanded
- MHRD AICTE STTP on Embedded System Design for two weeks during 1<sup>st</sup> Dec 2003 to 13<sup>th</sup> Dec 2003 organized by Dr.BabasahebAmbedkar Technological University Lonere.



- A DEP on DSP during July 2004 to October 2004 at KReSIT, I.I.T.Bombay
- MHRD AICTE STTP on Image Processing :Fundamental to Advances for two weeks during 15<sup>th</sup> Dec 2008 to 28<sup>th</sup> Dec 2008 organized by Department of Computer Engineering N.I.T Rourkela
- MHRD AICTE STTP on Advanced Signal Processing and Soft computing tools during 18<sup>th</sup> to 22<sup>nd</sup> May 2009 organized by Department of Electronics Engineering S.G.G.S Institute of Engineering and Technology, Nanded
- MHRD AICTE STTP on Medical Image Processing for early detection of disease during 5<sup>th</sup> to 11<sup>th</sup> Jun 2009 organized by I.I.T Kharagpur.
- Two day workshop on Neural Network organized by the Department of Electronics Engineering S P I T Andheri Mumbai during 27 -28 March 2010.
- Two days' workshop on System Modeling and simulation organized by Department of Electronics Engineering Fr.C.R.College of Engineering, Bandra, Mumbai during 24<sup>th</sup> -25<sup>th</sup> September 2013.
- Five day workshop on Virtual Instrumentation and Data Acquisition organised by Department of Electronics Engineering, K J Somaiya College of Engineering Mumbai during 24<sup>th</sup> to 28<sup>th</sup> August 2015.

## Relevant Courses

### UG level:

- Signals and Systems
- Digital Signal Processing and Processor
- Artificial Intelligence
- Discrete Time Signal Processing
- Filter Design
- Neural Network and Fuzzy system
- Electrical Network Analysis and Synthesis.
- Basic Communication Engineering.

### PG Level:

- System Modelling and simulation

- Machine Learning
- Advanced Digital Signal and Image processing.
- Discrete Time Signal Processing

**PhD Level (Course Work)**

- Machine Learning
- Signal processing

**Undergraduate and Postgraduate Courses**

<b>Sr. No</b>	<b>Course</b>	<b>Section</b>
<b>1</b>	Artificial Neural Network	<b>UG</b>
<b>2</b>	Pattern Recognition and Classification	<b>PG</b>
<b>3</b>	Multi-rate and Wavelet Transform	<b>PG</b>
<b>4</b>	Speech Processing	<b>UG and PG</b>
<b>5</b>	Statistical Signal Processing	<b>UG and PG</b>
<b>6</b>	Computer Vision	<b>PG</b>
<b>7</b>	Data Mining	<b>UG and PG</b>
<b>8</b>	Machine Learning and Fuzzy System	<b>UG and PG</b>
<b>9</b>	Adaptive Filtering	<b>UG and PG</b>
<b>10</b>	Data Analytics and Big Data	<b>UG and PG</b>

**Mentoring and Research Supervision**

- **Graduates**
  1. Spectral Transformation Using ANN
  2. Image Impainting
  3. Speaker Transformation Using ANN and GMM
  4. Music Genre Recognition and Classification
  5. Multilingual Emotion Recognition and Classification

6. Comparative Study of LSF and MCEP in Voice Conversion Framework.
7. Text Independent Speaker Recognition using Wavelet transform and ANN, GMM.

- **Under-Graduates**

1. Multimodal Biometric System
2. Vocal Emotion Recognition and Classification.
3. Speech Recognition
4. Speaker Recognition
5. Cross lingual Voice conversion
6. Intra-lingual Voice Conversion
7. Facial Expression Recognition and Classification.
8. Speech Operated Motion Tracker.
9. Gesture Recognition and Classification Vocal Emotion Transformation
10. Laryngectomees Vocal Cancer Detection and Classification using WT and NN
11. Speech operated Motion Tracker
12. Object Detection and Tracking Using Kalman filter.

### College Level Responsibilities

- Working as Head, Department of Electronics Engineering
- Chairman, BOS, Department of Electronics Engineering KJSCE Mumbai
- In-charge for Criteria 3 NAAC in 2017
- Coordinator, Virtual Lab, K J Somaiya College of Engineering, Nodal Centre, IIT Bombay [An Initiative of Ministry of Human Resource Development (MHRD), Under the National Mission on Education through ICT]
- Nature of experience Specialization, if any:
- Involved in teaching of post graduate and undergraduate students particularly delivered subjects like, Signal Processing, Neural Network and Fuzzy System, Filter Design, Signal and System, Speech Processing for UG and System modelling and simulation, Advanced DSP and IP, Machine learning for PG
- In charge of criteria 5 (NBA)
- Group Coordinator for Signals and Systems (NBA).

- Member for UG- CAP admission committee and Departmental Coordinator for Research and Development.
- Lab In-charge: Signal Processing and Image Processing Lab.
- Departmental Library Representative.

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