

BIO DATA

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Professor & Head

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Research Interests

Video Surveillance, Image Processing, Brain Signal Processing and Remote Sensing

Courses Taught

- ✓ **UG:** Artificial Intelligence and Robotics, Nature and Bio-inspired Computing, Social Computing, Python Programming, Data Structures, Operating Systems, Unix Internals, Java Programming, Advanced Java Programming, Software Engineering, User Interface Design, Object Oriented Analysis and Design, Business Intelligence, Microprocessors and Microcontrollers
- ✓ **PG:** Deep Learning, Soft Computing, Digital Imaging, Fuzzy Logic Theory & its Applications, Machine Learning Techniques, Advanced Operating Systems, Distributed Computing

Educational Qualifications

- ✓ **Ph.D.**, 2011, Faculty of ICE, Anna University Chennai, “Multi-view based Human action recognition and behavior understanding using shape features”
- ✓ **M.Tech**, 2005, CSE, Indian Institute of Technology Madras, “Content based video indexing and retrieval system” – *First Class with Distinction - 8.44 CGPA*
- ✓ **B.E**, 1997, CSE, Thiagarajar College of Engineering, Madurai, “Image Morphing”, *First Class with Distinction - 77.67%*

Work Experience @ NATIONAL ENGINEERING COLLEGE

Designation	Duration
Professor & Head	10.05.2018-till date
Professor	13.07.2015 - 09.05.2018
Associate Professor (Sr.Grade)	13.02.2012 - 12.07.2015
Asst. Professor	01.06.2007 - 12.02.2012
Sr. Lecturer	22.05.2006 - 31.05.2007
Lecturer	15.06.1998 - 21.05.2006

Professional Memberships

- ✓ Member in IEEE, IEEE (ITS), IEEE(CS), ISTE, IE(I)
- ✓ Chairman IEEE (ITS), IEEE-MAS

Countries visited : INDONESIA

Professional Awards

- ✓ *Prof. H.N.Mahabala Endowment prize [Best M.Tech thesis] from IIT Madras in 2005.*
- ✓ *IE(I) Young Engineer Award for the year 2008-2009 from IE(I), Kolkatta.*
- ✓ *Best TNSCST Project for the year 2010-2011 from TNSCST, Chennai.*
- ✓ *Received Plaque and Certificate from Institution of Engineers India (IE(I)), Kolkatta for the successful completion of IE(I) sponsored project entitled “Design of Adaptive Coal Mine Rescue Robot using WSNs” in 30th Indian Engineering Congress during December 17-20, 2015 at Guwahati, Assam.*
- ✓ *IEEE Professional achiever award for the year 2016-2017.*
- ✓ *Presented best student project among Asia Pacific region at IEEE-R10 HTC, Indonesia and received Rs.41,000/- as Travel grant from IEEE-HAC during December 2019.*

Sponsored R&D Projects

Agency Name	Project Title	From	To	Amount (Rs.)
NVIDIA Corporation	NVIDIA GPU Grant – Academic Seed Program	Dec 2017	Ongoing	1,25,000
EPICS in IEEE	casTalk: A smart Cloud Platform for casual talk between normal and deaf people	Dec 2016	Mar 2018	5,24,402
IE(I), Kolkatta	Design of Adaptive Coal Mine Rescue Robot using WSNs	Apr 2014	Mar 2015	20,000
TNSCST, Chennai	RFID based traffic control and monitoring system	Aug 2010	Mar 2011	6,000
AICTE, New Delhi	Real-time Human Activity Recognition System	Aug 2007	Sep 2009	3,70,000
DST, New Delhi	Real-time Multi Human Tracking and activity recognition system	Feb 2006	Mar 2009	14,41,200

Supervisor Recognition

- ✓ Recognized under Anna University Chennai since Feb 2014 [Ref. No. 2340090]
- ✓ PhD Scholars in progress: PT: 6, FT: 1 [One awaiting Vivavoce Exam]
- ✓ MS (By Research) in progress: FT : 1

Intl. Journal Publications (SCI & Scopus Indexed)

1. Human facial expression recognition using MANFIS model, V Gomathi, K Ramar, AS Jeevakumar, World Academy of Science, Engineering and Technology 50, 2009.
2. A neuro fuzzy approach for facial expression recognition using LBP histograms, V Gomathi, K Ramar, AS Jeevakumar, Int. J. of Computer Theory and Engineering 2 (2), 245, 2010.
3. An adaptive region based color texture segmentation using fuzzified distance metric, G Uma Maheswari, K Ramar, D Manimegalai, V Gomathi, Applied soft computing, 11 (2), 2011.
4. Human action recognition using monotonic triangular context based shape Features, V Gomathi, K Ramar, Int. J. of innovative computing information and control, 7(5 B), 2011.
5. A region based an adaptive color texture segmentation using similarity measure of symbolic object approach, G Uma Maheswari, K Ramar, D Manimegalai, V Gomathi, Advanced Engineering Informatics, Vol.33, pp.2167-2173, 2011.
6. XML based approach for object oriented medical video retrieval using neural networks, S Thanga Ramya, P Rangarajan, V Gomathi, Journal of Medical Imaging and Health Informatics 6 (3), 2016.
7. Comprehensive review on fusion techniques for spatial information enhancement in hyperspectral imagery, A Mookambika, V Gomathi, Multidimensional Systems and Signal Processing, 37 (5), 2016.
8. Pervasive health monitoring through video-based activity information integrated with sensor-cloud oriented context-aware decision support system, JayaLakshmi M, V Gomathi, Multimedia Tools and Applications, 2018.
9. Fundus Image Classification Using Wavelet Based Features in Detection of Glaucoma, Selvathi D, Prakash N. B, Gomathi V, Hemalakshmi G. R., Biomed Pharmacol J 2018;11(2).
10. Sensor-Cloud based Precision Agriculture Approach for Intelligent Water Management, JayaLakshmi M, V Gomathi, International Journal of Plant Production, (Accepted), 2019.

Highlights of Conference Participations [Intl. Conf. : 18, Nat. Conf. : 14]

IEEE Xplore Proceedings [Scopus Indexed]

1. Human action recognition using triangular context base shape features, K Ramar, V Gomathi, IHCI'10.
2. Unsupervised monitoring of urban land use and land cover change detection in multi-temporal images, N Sathya, S Kalaiselvi, V Gomathi, KG Srinivasagan, ICECS'14.

3. An Enhanced Underground Pipeline Water Leakage Monitoring And Detection System Using Wireless Sensor Network, M JayaLakshmi, V Gomathi, ICSNS'15.
4. Secure communication between wireless medical sensor networks and data servers using pallier and elgamal key cryptosystem, A. Vasukidevi, M JayaLakshmi, V Gomathi, ICCTIDE'16.
5. Crowd Scene analysis using Deep Learning Network, Santhini C., Gomathi V, ICCTCT'18.
6. Framework for advanced weather forecasting technique using DMaaS in Cloud, Veera Anusuya V., Gomathi V, ICCTCT'18.
7. Human vision reconstruction using brain activity profile, Rathi K., Gomathi V, ICCCA'18.
8. Real-Time Recognition of Indian Sign Language, Muthu Mariappan H, Dr.Gomathi V, ICCIDS'19.

Iconic Conference Participations

1. A Frame work for Content Based Video Indexing and Retrieval System: CBVIR, Andhra Pradesh, ICCTIT'05.
2. Occlusion Detection and Handling for multi human tracking in Video Surveillance Systems, K Ramar, V Gomathi, Dalian University of Technology, CHINA, ISME'09.
3. Human Facial Expression Recognition using MANFIS Model, MALAYSIA, ICCISE'09
4. A Registration Technique for Medical Images using Fuzzy-SIFT Matching, MJ Adaline, S Kalaiselvi, V Gomathi, KG Srinivasagan, ICIIECES'14.
5. Psychological person-centric guiding mechanisms for managing distractions of in-attentive student, V Latha, V Gomathi, Alagappa University, 11-12 July 2019, CPBPE'19.

Co-ordination of Initiatives

- ✓ Signed MoU with Bennett University, Greater Noida as Head-Lead Zone Partner for AI-Deep Learning (leadingindia.ai) research initiative during Aug 2018.
- ✓ Signed MoU with UiPath Academic Alliance during August 2019 for global certifications in Robotic Process Automation.
- ✓ Signed MoU with Adroit Soft India (P) Ltd, Chennai during July 2018 for Research Innovation in Block chain technology.
- ✓ Signed MoU with Red Hat Academy, Mumbai for Global Red Hat certifications during September 2018.
- ✓ Remote Centre Coordinator for IIT Bombay Remote Centre for Learning.
- ✓ Chairman, IEEE-ITS Madras Chapter since February 2019.
- ✓ Staff Counselor, IEEE Computer Society Student Chapter, NEC since June 2018.
- ✓ Active Industrial training related interactions with SUMTWO at CSE Technobation Centre since December 2018.

Professional Activities

Technical Events Organized:

Event Title	Agency	Amount	Duration
One day National level Technical symposium "COMPONEC-05"	TCS	20000	22.09.2005
A two day DIT sponsored National seminar on "Recent trends and issues in video data analysis for surveillance"	DIT	35000	23.12.2008-24.12.2008
National conference on Advanced Networking and Image processing (NACIPAN'10)	DST, TCS DRDO	200000	05.03.2010-06.03.2010
Continuing Education Programme on "Advanced C,C++ Programming"			Aug 2008 to Jan 2009
One Day Technical Seminar by Dr.Gaurav Sharma, Professor, University of Rochester, USA			29.08.2012
Value Added Course on "Java Application Development" – Set 1			Even Sem 2014-2015
2days DST sponsored workshop on Advancements in Visual Sensor Networks and its impact on public safety & security	DST	35000	08.01.2015-09.01.2015
Value Added Course on "Java Application Development" – Set 2			Odd Sem 2015-2016
2 days DBT sponsored workshop on :Modern computing technologies for Affective Brain Computer Interface(ABCI)"	DBT	50000	08.01.2016-09.01.2016
IEEE-International Conference on Computing Technologies and Intelligent Data Engineering ICCTIDE-16	IEEE,TCS, BRNS, ISRO	205000	07.01.2016-09.01.2016
Value Added Course on "Business Intelligence Solution Development"			Even Sem 2015-2016
4 days Quality based Professional Training Programme			19th June, 2 nd July 8 th - 9 th August – 2016
Industrial Training Programme on "Data Science and Machine Learning"	EPICs in IEEE	60000	24-26, Nov 2017
Research Interaction on "Deep Learning using GPU for Computer Vision Applications"	EPICs in IEEE	15000	27.01.2018
IARCS sponsored 2 days Instructional course on "Applied Game Theory"	IARCS, Delhi	Technical support	07-08, July 2018
DST-SERB sponsored 2 days national workshop on "Machine Learning Techniques for WSN: Networks to Application Perspective"	DST-SERB, New Delhi	50000	17-18, Nov. 2018
Anna University approved FDTP on "Design and Analysis of Algorithms"	AU Chennai	Self-supporting	Dec 2018
Bennett University sponsored 3 days hands-on workshop on "AI and Deep Learning"	BU, Noida	10000	28-30 Dec 2018
IEEE Madras section sponsored Symposium IEEE MASSYMP-2019 by Cluster 3 – IEEE (ITS)	IEEE (ITS)	5000	9, March 2019

Event Title	Agency	Amount	Duration
2 Days workshop on “Insights in AI & Deep Learning”	NEC		August 2019
TNSCST sponsored 2 Days symposium - COMPONEC’19	TNSCST	20000	12-13, Sep 2019
Anna University approved FDTP on “Compiler Design”	AU Chennai	18000	16-21 Dec 2019
CIIL sponsored 2 days National Seminar on “Recent Trends & Research Directions of Deep Learning in Natural Language Processing”	CIIL, Bangaluru	30000	29-30, Jan 2020
IEEE MAS section sponsored 2 days workshop on “Machine Learning using Python”	IEEE MAS	10000	31 Jan & 1 Feb 2020
CIIL sponsored 2 days National Seminar on “Research avenues in Deep Learning for Natural Language Processing”	CIIL, Bangaluru	30000	29-30, Jan 2020

Expert Lectures Delivered (during past 10 Years):

S.No	Title	Venue	Date
1.	Machine Learning using Python	GCE, Tirunelveli	27.09.2019
2.	Embedding Deep learning in IoT Healthcare Devices	CSIR Seminar, NEC, Kovilpatti	31.01.2019
3.	Hands-on session on Neural Network ToolBox	IEEE Students’ Chapter, NEC, Kovilpatti	24.01.2019
4.	AU Chennai FDTP on DAA	NEC, Kovilpatti	04.12.2018
5.	Domains for Human Cognition Development	Anna University Chennai	07.10.2017
6.	Machine Learning Techniques for Big Data	CSI Students Chapter, NEC	15.02.2018
7.	Raspberry Pi for Computer Vision	ISTE Students Branch, NEC	03.02.2018
8.	Pythonfor Beginners	IEEE Students Branch, NEC	09.09.2017
9.	Python Programming with Functions	GCE, Tirunelveli	16.08.2017
10.	NLP – Understanding & Generation	NEC, Kovilpatti	05.10.2016
11.	Hands-on session on EEGLAB Toolbox for BCI	ISTE, NEC, Kovilpatti	29.09.2016
12.	Real-time applications using PRML in MATLAB	NEC, Kovilpatti	11.08.2016
13.	Hands-on session on Neural Network ToolBox	IEEE Students’ Chapter, NEC, Kovilpatti	05.08.2016
14.	Recent advancements in Image Processing	VVV College for Women, Virudhunagar	17.07.2016
15.	Security in Cyberspace	IEEE Students’ Chapter, NEC, Kovilpatti	09.04.2016
16.	Big Data Technologies	NECSI’16 Symposium, NEC, Kovilpatti	09.03.2016
17.	Information theoretic Entities	IEEE Students’ Chapter, NEC, Kovilpatti	05.03.2016
18.	Big Data Technologies	CSI, NEC, Kovilpatti	09.10.2015
19.	Research avenues in Medical Image Processing	Sathakathulla Appa College, Tirunelveli	25.08.2015

S.No	Title	Venue	Date
20.	Hands-on session on Neural Network ToolBox	IEEE Students' Chapter, NEC, Kovilpatti	07.08.2015
21.	Multimodal biometric authentication	Sri Saradha College for women, Tirunelveli	25.07.2015
22.	Cloudcomputing approaches for genomeinformatics	NEC, Kovilpatti	09.07.2015
23.	Hands on session on Video processing ToolBox	NEC, Kovilpatti	09.01.2015
24.	Digital Image Processing using MATLAB	IEEE Students' Chapter, NEC, Kovilpatti	06.09.2014
25.	Applications of Soft Computing Tools	Mohandas College of Engg. & Tech, Nedumankadu, Trivandrum, Kerala	08.04.2014
26.	Food processing using NDT	NEC, Kovilpatti	04.10.2013
27.	Research Issues on Non Destructive Evaluation	NEC, Kovilpatti	20.09.2013
28.	Verifiable Evidence Security	NEC, Kovilpatti	02.08.2013
29.	Unsupervised Learning	PSG Tech, Coimbatore	03.06.2013
30.	NP Completeness in AU sponsored FDP	NEC, Kovilpatti	10.06.2013
31.	Multi-resolution Analysis using Wavelets	MEPCO SchlenkEngg. College, Sivakasi	22.05.2013
32.	Computational Models for Cognitive Science	NEC, Kovilpatti	02.02.2013
33.	Research Issues & Challenges in Video Processing	MSU, Tirunelveli	17.12.2012
34.	Image Understanding and Motion Analysis	Anna University (TRC), Tirunelveli	13.12.2012
35.	Semantic Image Analysis	MEPCO Schlenk Engg. College, Sivakasi	12.10.2012
36.	Applications of Neural Networks in Nuclear Reactor Monitoring and Diagnosis	NEC, Kovilpatti	28.09.2012
37.	Feature Extraction for video processing	R.M.D.Engineering College, Chennai	23.06.2012
38.	Hands on workshop - Soft Computing in MATLAB	Dr.G.U.Pope College of Engineering, Sawyerpuram	22.03.2012
39.	Recent Trends in DIP	KCET, Virudhunagar	09.03.2012
40.	Fuzzy Logic Hands on Training in MATLAB	IRTT, Erode	01.02.2012
41.	Fuzzy logic based embedded system design	Einstein College of Engineering, Tirunelveli	30.09.2011
42.	Medical Image Analysis and their issues	NEC, Kovilpatti	06.08.2011
43.	Application of Soft computing in Electrical Engg.	NEC, Kovilpatti	05.08.2011
44.	Bioinformatics and its design issues	Sri Vidya College of Engg, Virudhunagar	10.03.2011
45.	Advances in facial biometrics	Sri Vidya College of Engg, Virudhunagar	23.08.2010
46.	Recent trends and Research Issues in Image Processing	Bharath Niketan College of Engineering, Theni	19.03.2010

Technical Events Attended :

Venue	Duration	Event Title
Pondicherry Academic College, Pondicherry	18.05.1998 to 07.06.1998	21 Days AICTE sponsored Induction Programme for Engineering Education
NEC, Kovilpatti	26.02.2000	ISTE Convention on “Teaching – Learning Strategy”
IITM, Chennai	27.03.2005 to 29.03.2005	3 Days Quality Improvement Training Programme on “Teaching Methodologies” sponsored by NITTTR, Chennai
NEC, Kovilpatti	14.09.2006 to 16.09.2006	Two days workshop on “PhD Aspirants meet on Academic Research : An Industrial Perspective”
NITT, Trichy	05.12.2007	One day DST sponsored seminar on “Image and Video processing & analysis”
NEC, Kovilpatti	16.05.2008 to 17.05.2008	Two day National seminar on “Pattern recognition for Multimedia content analysis”
MEPCO, Sivakasi	22.08.2008 to 23.08.2008	Two days CSIR National Seminar on “Multimedia Signal Processing”
NEC, Kovilpatti	30.11.2009 to 04.12.2009	Five days “Mission10X” workshop
NEC, Kovilpatti	31.03.2010 to 01.04.2010	Two days advanced Workshop on “Course Planning” sponsored by Wipro Systems, Bangalore
NEC, Kovilpatti	28.01.2011 to 29.01.2011	Two days CSIR sponsored National Seminar on “Research Issues in Wearable Computing”
Cognizant Technology Systems, Chennai	30.06.2011 to 01.07.2011	Two days Cognizant - ICT academy of Tamilnadu sponsored Faculty Development Programme on “RIPLLE-2011”
NEC, Kovilpatti	14.02.2013	One day Special Lecture on “Advances in Image Processing” by Dr.R.Balasubramanian, IIT Roorkee
TCE, Madurai	29.04.2013	One day NBA Evaluator/Resource person Workshop on “Outcome based Education” (Phase – I)
TCE, Madurai	09.05.2013 to 11.05.2013	Three days NBA Evaluator/Resource person Workshop on “Outcome based Education” (Phase – II)
NEC, Kovilpatti	08.11.2014 to 09.11.2014	Two days TN&P ISTE Convention, at NEC, Kovilpatti
NEC, Kovilpatti	28.11.2014 to 30.11.2014	Three days Ignite HR orientation Programme
NEC, Kovilpatti	18.11.2015 to 20.11.2015	Formulation of Research & Development Grant Proposals by Scientists and Technologists – 3 Days
NITT, Trichy	27.11.2015 to 28.11.2015	Two days workshop on “Video Analytics” under Indo-US 21st Century Knowledge Initiative Programme
NEC, Kovilpatti	17.05.1998	One day workshop on “Internet and its Uses”

Venue	Duration	Event Title
Leela Ambience, Gurgaon	18.03.2016 to 20.03.2016	3 rd World Summit on "Outcome Based Accreditation"
NEC, Kovilpatti	08.01.2016 to 09.01.2016	Two days DBT sponsored National workshop on Modern computing technologies for Brain Computer Interface (ABCI)
Amrita, Kerala	06.05.2016	National Nodal Centre Conference
IIT Kanpur	14.07.2016 – 25.08.2016	Elite certification for NPTEL course on “How the Brain Creates Mind”
Chennai Statistical Institute	Jan–Mar 2017	Golden Elite certification for NPTEL course on “Programming, Data Structures and Algorithms in Python” (20 Hrs) 91%
IIT Kanpur	July–Sep 2017	Elite certification for NPTEL course on “Cognition, Transformation and Lives”
IIT Hyderabad, Telangana	5 th Mar – 9 th Mar’ 2018	5 days GIAN course on “Programming GPUs & Accelerators: A Principled Quantitative Approach”
KLE Technological University, Karnataka	11 th – 13 th Aug 2018	3 Days leadingindia.ai workshop on “Deep Learning and AI”
IIT Madras	Aug-Oct, 2018	Elite certification for NPTEL course on “Deep Learning – Part 1”
IIT Karaghpur	July-Sep, 2019	Elite certification for NPTEL course on “Psychology for Every Day”
TLC, CIT, Coimbatore	8-12, February, 2020	Faculty Empowerment Programme on “Teaching, Learning and Assessment with MOOC platform and Open Education Resources”