

National Institute of Technology, Tiruchirappalli: Performa for CV of Faculty/ Staff Members

6. Field(s) of Specialization: : Data Compression, Image/Video Analysis, Information Retrieval, Deep Learning for Computer Vision

7. Employment Profile

Job Title	Employer	From	To
Member, Technical Staff	General Manager, SAI Technology, Chennai	Mar-2008	Nov-2008
Assistant Professor (Grade Pay: 7000)	Director, National Institute of Technology, Trichy	08-12-2008	07-12-2011
Assistant Professor (Grade Pay: 8000)	Director, National Institute of Technology, Trichy	08-12-2011	11-03-2018
Associate Professor	Director, National Institute of Technology, Trichy	12-03-2018	Till now

8. Academic Qualifications (From Highest Degree to High School):

Examination	Board / University	Year	Division/ Grade	Subjects
Ph.D	Gandhigram Rural Institute-Deemed University	2008	Highly Commended	Computer Science & Applications
M.C.A	Bharadhidasan	2001	74.64	Computer Applications
B.Sc	Bharadhidasan	1998	80.10	Physics
Higher Secondary	TNSB	1995	87.33	Mathematics, Physics, Chemistry
High School	TNSB	193	86.2	NA

9. Academic/Administrative Responsibilities within the University

Position	Faculty/Department/Centre/Institution	From	To
PAC Chairman	Computer Applications(CA)	2010	2022

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Final Year Project Co-Coordinator	CA	2011	2022
Member, Doctoral Committee	CSE, CA, ECE, PROD	2015	2022
Ph.D Coursework Coordinator	Maths, CA, CSE	2010	2011
Coordinator	Centre of Excellence in Artificial Intelligence	Feb-2020	May-2022

10. Academic/Administrative Responsibilities outside the University

Position	Institution	From	To
Member, Doctoral Committee	Anna University, Chennai	2012	2016
Member, Doctoral Committee	VIT, Vellore	2014	2022
Member, Doctoral Committee	VIT, Amaravathi, SRM Chennai	2020	2022

11. Awards, Associateships etc.

Year of Award	Name of the Award	Awarding Organization
2011	BEST PAPER AWARD	ICIP-2011, Bangalore
2018	BEST PAPER AWARD	IITD&M, Kancheepuram
2018	GPU-GRANT AWARD	NVIDIA Corporation
2019	BEST PERFORMER FACULTY AWARD	NIT TIRUCHIRAPPALLI
2020	BEST PERFORMER FACULTY AWARD	NIT TIRUCHIRAPPALLI

12. Fellowships

Year of Award	Name of the Fellowship	Awarding Organization	From (Month/Year)	To (Month/Year)
2005	GRI Fellowship	Gandhigram Rural Institute-Deemed University	2005	2006

13. Details of Academic Work

(i) Curriculum Development

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Assisted to develop curriculum for M.Tech Data Analytics, MCA, MSc. M.Tech (AI&DS)

(ii) Courses taught at Postgraduate and Undergraduate level

Computer Organization and Architecture
Organizational Behaviour
Resource Management Techniques
Replacement , Reliability and Network Models
Basics of Programming
Probability and Statistical Methods
Image Processing
Computer Networks
Python and R programming
Image&Video Analytics

(iii) Projects guided at Postgraduate level

More than 120 projects guided.

(iv) Other contribution(s)

Handling Labs : DBMS lab, OS&Network lab, Data Structures lab, Data Mining lab

14. Details of Major R&D Projects

Title of Project	Funding Agency	Duration		Status
		From	To	Ongoing/ Completed
Internet Multimedia Search Engine for Information Retrieval in distributed Environment	DST	2010	2013	Completed
Detection of pectoral muscle and mass in mammogram image for early diagnosis of breast cancer to increase the life span of women	DST-Disha	2015	2016	Completed
Mobile Application Development	Qualcomm	2013	2014	Completed
AI Based Integrated Logistics Management System for Indian Navy	NRB-DRDO	2020	2022	Completed

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(Air)				
Human Behaviour Analysis From Video Sequences- Deep Learning Approach	NVIDIA Corporation	2018	2019	Completed
Development of Computer Vision System for an AI Assistant	ISRO	2021	2022	On-going

15. Number of PhDs guided

Name of the PhD Scholar	Title of PhD Thesis	Role(Supervisor/ Co-Supervisor)	Year of Award
GG.Lakshimi Priya	Temporal Video Segmentation and KeyFrame Extraction	Supervisor	2014
V.Glory	Inverted List Compression for Information Retrieval Systems	Supervisor	2015
J Praveen Kumar	IMAGE BASED PLANT SEGMENTATION and LEAF COUNTING for PLANT PHENOTYPING	Supervisor	2019
M.Naveen Kumar	3D ACTION RECOGNITION FROM SKELETON DATA USING CNN and LSTM	Supervisor	2020
S.Jayasankari	A NEW BRIGHTNESS ASSESSMENT METHOD and HISTOGRAM SHAPE BASED SPECIFICATION TECHNIQUES for CONTRAST ENHANCEMENT	Supervisor	2020
R.Sridharan	A STUDY on PLACEMENT for INTERCOMMUNICATING TASKS of ELASTIC CLOUD APPLICATION	Supervisor	2020

16. Participation in Workshops/ Symposia/ Conferences/ Colloquia /Seminars/ Schools etc. (mentioning the role)

Date (s)	Title of Activity	Level of Event (International/ National/ Local)	Role (Participant/ Speaker/ Chairperson, Paper presenter, Any other)	Event Organized by	Venue

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Mar 25-26, 2005	NCCMM-2005	National	Paper presenter	GRI-DU	GRI-DU
7-9 Dec.2006	IEEE-ICSIP-2006	International	Paper presenter	BVB CET, Hubli	Karnataka, India,
Sept. 26-28, 2006	IEE-VIE-2006	International	Paper presenter	IEE	Leela Palace Bengalure
Nov 14-17, 2010	IEEE-PSIVT 2010	International	Paper presenter	IEEE, Singapore	Nanyang Tec.Univ. singapore
Dec 16-19, 2012	ICGVIP-MedImage-2012	International	Paper presenter	IIT Bombay	IIT Bombay
Dec 3-6, 2014	AIRS-2014	International	Paper presenter		Kuching Malaysia
5 th -10 th /01/ 2009	Technical Education Quality Improvement Programme	Local	Participant	NITTR, Chennai	NITTR, Chennai
13-17/07/09	Short Term Training Programme	Local	Participant	NITT	NITT
19/05/10	Workshop	Local	Participant	NITT	NITT
24/08/09	Workshop	Local	Participant	NITT	NITT
06/01/09	Invited lecture	Local	Participant	NITT	NITT
19/09/09	Training Programme	Local	Participant	NITT	NITT
12-13/03/09	Training Programme	Local	Participant	NITT	NITT
16/11 - 06/12/11	Refresher course	Local	Participant	Madras university, Chennai	Madras university, Chennai
08-13/08/16	Workshop	Local	Participant	NITT	NITT

17. Workshops/ Symposia/ Conferences/ Colloquia/Seminars Organized (as Chairman/ Organizing Secretary/ Convenor / Co-Convenor)

Title of Activity	Level of Event (International/ National/ Local)	Date (s)	Role	Venue
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Android Apps Development	Local	March, 27-28, 2014	Co-ordinator	MCA Lab, NITT
SAP HANA1.0-Big Data Management System	Local	September 10, 2014	Coordinator	A-2 Hall, NITT
Tools and Techniques for Information Processing Research	Local	Sep, 11&12 2015	Coordinator	Conference Hall- CA Dept, NITT
Platforms for Big-Data Analytics	National	July, 15&16, 2016	Coordinator	A13 Hall, NITT
Artificial Intelligence and Machine Learning Techniques for Data Analytics	National	15.02.2021 To 19.02.2021	Coordinator	Online

18. Invited Talks delivered

Topic	Date	Inviting Organization
Embedded Systems and Emerging Wireless technologies	21-08-2008	Vel's Srinivasa College of Engg. & Tech., Chennai
Algorithms and Data Structures	27-08-2008	SAI Technology, Chennai
Network Traffic Management Algorithms	28-08-2008	SAI Technology, Chennai
Introduction to Matlab	10-04-2010	SRIT, Coimbatore,
Data Compression	03.05.2010	GCT, Coimbatore
Vector Quantization and Its application	08/09/2011	MKU, Madurai
Feature Extraction for Image Analysis	03/01/2014	Madras University, Chennai
Mathematical foundations of Image Processing	21/11/2014	Madras University, Chennai
Mathematical Transforms for Image Analysis	25/11/2015	CIT, Coimbatore
Mathematical Transforms for Video Analysis	27/11/2015	NITT
Mathematical Transforms for Image Processing	29/02/2016	Gandhigram Rural Institute - Deemed University
Introduction to Data Science	18/03/2016	Govt. Arts College, Thuvakudi, Trichy
Mathematical Foundations for Image Processing	2018	UGC-HRD Centre, Bharathidasan University
Deep Learning for Computer Vision	2021	MCA Dept, PSNA College of Eng.&Tech.
Deep Learning for Computer Vision	2021	ECE Dept, PSNA College of Eng.&Tech.

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19. Membership of Learned Societies

Type of Membership (Ordinary Member/ Honorary Member / Life Member)	Organization	Membership No. with date
Life Member	CSI	01153651, 2012
Life Member	IAENG	111643, 2011

20. Academic Foreign Visits

Country	Duration of Visit	Programme
Singapore	Nov 14-17, 2010	Conference
Malaysia	Dec 3-6, 2014	Conference
Israel	Dec-2017	Conference

21. Publications

(A) **Web of Science Indexed Journals (SCI, SCIE, ESCI):**

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	DOI	Impact Factor of the Journal (Optional)
Jayapal P.K.;Park E.;Faqeerzada M.A.;Kim Y.S.;Kim H.;Baek I.;Kim M.S.;S Domnic. ;Cho B.K.	Analysis of RGB Plant Images to Identify Root Rot Disease in Korean Ginseng Plants Using Deep Learning	Applied Sciences	12	2489	2022		
R Sridharan, S Domnic	Network policy aware placement of tasks for elastic applications in IaaS-cloud environmen	Cluster Computing	24	1381-1396	2021		

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R Sridharan, S Domnic	Placement for Intercommunicating Virtual Machines in Autoscaling Cloud Infrastructure: Autoscaling and Intercommunication Aware Task Placement	Journal of Organizational and End User Computing	33	17-35	2021		
S Jayasankari, S Domnic	Contrast Enhancement Using Inverted Gaussian Histogram Specification Technique	Circuits, Systems, and Signal Processing	40	1252-1277	2021		
M Naveenkumar, S.Domnic	Deep ensemble network using distance maps and body part features for skeleton based action recognition	Pattern Recognition	100	107125	2020		
J.Praveen Kumar, S.Domnic	Rosette plant segmentation with leaf count using orthogonal transform and deep convolutional neural network	Machine Vision and Applications	31	1-14	2020		
J.Praveen Kumar and S.Domnic	Image Based Plant Phenotyping using Graph Based Method and Circular Hough Transform	Journal of Information Science and Engineering	34	671-686	2018		
J. Nelson Raja, P. Jaganathan and S. Domnic	Variable length integer codes based on radix number system conversion	Electronic Letters	52	1385–1387	2016		
S.Domnic and V.Glory	Extended Rice Code and Its applications to R-Tree Compression	IETE Journal of Research	61	634-641	2015		
G.G.Lakshmi Priya and S.Domnic,	Walsh Hadamard Transform Kernel based Feature	IEEE Trans. on Image Processing	23	5187-5196	2014		

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	Vector for Shot Boundary Detection,						
G.G.Lakshmi Priya and S.Domnic	Shot based Keyframe Extraction for Ecological Video Indexing	Ecological Informatics	23	107-117	2014		
V. Glory, S. Domnic	Re-Ordered FEGC and Block Based FEGC for Inverted File Compression.	IJIRR	3	71-88	2013		
K.Somasundaram and S.Domnic	Extended Golomb Code for Integer Representation	IEEE Transactions on Multimedia	9	231-239	2007		

Scopus Indexed Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	DOI	Impact Factor of the Journal (Optional)
RS Nair, S Domnic	A combination of learning and non-learning based method for enhancement, compression and reconstruction of underwater images	Aquaculture and Fisheries	7	201-210	202		
M Naveenkumar, S Domnic	Spatio Temporal Joint Distance Maps for Skeleton-Based Action Recognition Using Convolutional Neural Networks	International Journal of Image and Graphics	21	2140001	2021		
RS Nair, R Agrawal, S Domnic, A Kumar	Image mining applications for underwater environment management-A review and research agenda	International Journal of Information Management Data Insights	1	100023	2021		
M Naveenkumar,	Learning Representations	Advances in Distributed	8		2020		

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S Domic	from Spatio-Temporal Distance Maps for 3D Action Recognition with Convolutional Neural Networks	Computing and Artificial Intelligence Journal					
M Naveenkumar, S Domic	Learning representations from quadrilateral based geometric features for skeleton-based action recognition using LSTM networks	Intelligent Decision Technologies	14	47-54	2020		
S Jayasankari, S Domic	Histogram shape based Gaussian sub-histogram specification for contrast enhancement	Intelligent Decision Technologies	14	67-80	2020		
S Jayasankari, S Domic	Histogram Shape Based Gaussian Histogram Specification for Contrast Enhancement.	Rev. d'Intelligence Artif.	33	415-426	2019		
M Naveenkumar, S Domic	Ensemble Spatio-Temporal Distance Net for Skeleton Based Action Recognition.	Scalable Comput. Pract. Exp	20	485-494	2019		
JP Kumar, S Domic	Image based leaf segmentation and counting in rosette plants	Information Processing in Agriculture	6	233-246	2019		
R Sridharan, S Domic	Placement strategy for intercommunicating tasks of an elastic request in fog-cloud environment	Scalable Computing: Practice and Experience	20	335-348	2019		
M Naveenkumar,	Vector quantization	Procedia	133	27-36	2018		

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S Domnic	based pairwise joint distance maps (VQ-PJDM) for 3D action recognition	Computer Science					
S Jayasankari, S Domnic	A New Brightness Assessment Method to Predict the Balance of Color Occurrence	Procedia Computer Science	133	19-26	2018		
J. Nelson Raja, P. Jaganathan and S. Domnic,	A New Variable-length Integer Code for Integer Representation and Its Application to Text Compression	Indian Journal of Science and Technology	8	IPL0385	2015		
S.Domnic and K.Somasundaram	FAST AND LOW BIT RATE AMBTC IMAGE COMPRESSION SCHEME	International Journal of Computers and Applications	33	108-115	2011		

Other Indexed Journals:

Author(s)	Title of Paper	Journal	Volume (No.)	Page numbers	Year	DOI	Impact Factor of the Journal (Optional)
J. Nelson Raja, P. Jaganathan and S. Domnic	Modified Golomb Code For Integer Representation	IJSRD	3	1100-1104	2016		
V. Glory, S. Domnic	Compressing Inverted Index Using Optimal FastPFOR	Journal of Information Processing	23	1-7	2015		
G.G.Lakshmi Priya and S.Domnic	Shot Boundary Detection Using Hilbert Transform based Features	ICTACT Journal On Image and Video Proc.	5	1001	1001-1009		
G.G.Lakshmi Priya and S.Domnic	Shot boundary based keyframe extraction for video summarization	International Journal of Computational Intelligence Studies	3	157-175	2014		

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G.G.Lakshmi Priya and S.Domnic	Medical video summarization using central tendency based shot boundary detection	International Journal of Computer Vision and Image Processing	3	55-65	2013		
G.G.Lakshmi Priya and S.Domnic	Detection of Abrupt and Gradual Transitions in Digital Video Sequences	International Journal of Information Processing	6	21-31	2012		
G.G.Lakshmi Priya and S.Domnic	Transition Detection Using Hilbert Transform and Texture Features	American Journal of Signal Processing	2	35-40	2012		
G.G.Lakshmi Priya and S.Domnic	Edge Strength Extraction using Orthogonal Vectors for Shot Boundary Detection	Procedia Technology	6	247-254	2012		
S.Domnic and V.Glory	Inverted File Compression Using EGC and FEGC	Procedia Technology	6	493-500	2012		

(B) Conferences/Workshops/Symposia Proceedings

Author(s)	Title of Abstract/ Paper	Title of the Proceedings	Page numbers	Conference Theme	Venue	Year	DOI
RS Nair, R Agrawal, S Domnic	Light Weight Encoder-Decoder for Underwater Images in Internet of Underwater Things (IoUT)	Proceedings of AISP-2022	1-7	2nd International Conference on Artificial Intelligence and Signal Processing		2022	

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RS Nair, S Domnic	Underwater Video Compression Using Threshold Value Provided by Optimizing Algorithms	Proceedings of AISP- 2020	1-6	2020 International Conference on Artificial Intelligence and Signal Processing (AISP)	(online)	2020	
Nelson Raja, P.Jeganathan, S.Domnic	Design of a New Variable- length integer code based on Integer Representation	Proceedings of ICECS 2016		International Conference on Electronics and Communication	Karpagam College of Engineering Coimbatore, Tamilnadu	2016	
S.Domnic and V.Glory	Enhanced FASTPFOR for Inverted Index Compression	LNCS	221-229	Information Retrieval	Kuching, Malaysia	2014	
G.G.Lakshmi Priya and S.Domnic	Modified Color Layout Descriptor for Gradual Transition Detection	CCIS	421-428	Mathematical Modeling and Scientific Computation	GRI-DU	2012	
G.G.Lakshmi Priya and S.Domnic	Video Shot cut detection using Least Square Approximation Method	CCIS	161-170	Information Processing	Bengalure, India	2011	
B.Janet, A.V.Reddy and S.Domnic,	Incremental Codebook Generation for Vector Quantization in Large Scale Content Based Image Retrieval	Proc. of IEEE- Intl. Conf. on Computational Intelligence and Computing Research- 2010	223-226	Computational Intelligence and Computing Research	Tamilnadu College of Engineering, Coimbatore	2010	
G.G.Lakshmi Priya and S.Domnic	Video Cut Detection using Dominant Color Features	Proceedings of First Intl. Conf. on Intelligent Interactive Technologies and	130- 134	Intelligent Interactive Technologies and Multimedia	Allahabad, India	2010	

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		Multimedia-2010					
B.Janet, A.V.Reddy and S.Domnic	Vector Quantization Based Index Cube Model for Image Retrieval	IEEE-PSIVT- 2010	27-32	Image and Video Technology	Nanyang Technological University, Singapore	2010	
B.Janet, A.V.Reddy and S.Domnic	An Image Index Model for Retrieval	CCIS	465-467	Recent Trends in Business Administration and Information Processing	Trivandrum, Kerala, India.	2010	
G.G.Lakshmi Priya and S.Domnic	Video Cut Detection using Block based Histogram differences in RGB color space	Proc. of IEEE- ICSIP-2010		signal and image processing	RMD Engineering College, Chennai	2010	