

## BIO-DATA

1. Name : **Dr. Sukhendu Das.**
2. Date of birth : June XY , 1962.
3. Designation : Professor,  
and Address Deptt. of Computer Science and Engg.,  
IIT Madras, Chennai - 600036.  
INDIA.

4. Academic qualifications:

Degree	Institute	Area/Discipline	Year
Ph. D	IIT Kharagpur	Computer Vision	1993
M. Tech	IIT Delhi	Computer Technology	1987
B. Tech	IIT Kharagpur	Electrical Engg.	1985

5. Experience :

(a) Work in India :

Organization	Designation	Period
IIT Madras	Lecturer	1989 - 1994.
IIT Madras	Asstt. Prof.	1994 – 2004.
IIT Madras	Assoc. Prof.	2004 - 2010.
IIT Madras	Professor	since June 2010.

(b) Work Abroad:

- Post-doctoral research work at the Deptt. of ET&IT, University of Applied Sciences, Pforzheim, Germany, from Dec. 2001 till May 2003.
- Gledden visiting scientist at the Deptt. Of CS&SE, University of Western Australia, Perth, Australia, from June – Aug. 2006.
- Australian Leadership Award Fellowship at the Deptt. Of CS&SE, University of Western Australia, Perth, Australia, from July – Sept. 2008.

(c) Visits Abroad :

<u>Duration</u>	<u>Place</u>	<u>Purpose</u>
Oct. - Nov. 1995	Neunkirchen, Germany	Industry Sponsored Consultancy assignment.
Sept. 2002	Toulouse, France	Present a paper at EUSIPCO '02 Conf.
Sept. 2002	Malaga, Spain	Present a paper at IASTED/VIIP '02 Conf
Aug. 2006	Hong Kong	Present a paper at IEEE-ICPR '06 Conf.
Jan. 2008	Seoul, Korea	Tutorial talks on "Computer Vision"
Nov. 2009	Cairo, Egypt	Present a paper at IEEE – ICIP '09 Conf.
July 2010	Seattle, USA	Microsoft Faculty Summit, 2010
Nov. 2011	Barcelona, Spain	DEMO on a prototype of VIDLOOKUP, short-listed (among <b>top 12</b> ) at IEEE-ICCV-2011 Conf.
Aug. 2012	LA, USA	<b>SIGGRAPH</b> -2012 Conf.
Mar-Apr, 2014	Stuttgart, Germany	DAAD Sandwich Exchange Programme
Sept. 2014	Nottingham, UK	Present a paper at <b>BMVC</b> '14 Conf.
Oct. 2014	Paris, France	Present a paper at ICIP'14 Conf.
July 2015	Seattle, USA	Microsoft Faculty Summit, 2015
June 2016	Las Vegas, USA	Present a paper at <b>CVPRW</b> Conf. 2016
Dec. 2017	Long Beach, USA	Present a paper at <b>NIPS</b> Conf. 2017
Sept. 2018	Munich, Germany	ECCV '18 Conference – 3 workshop papers
Dec. 2018	Perth, Australia	Two papers at ACCV '18

6. Teaching Interests :

Course No:

Course Title

**A. Software:**

- \* **CS 1100**      **Introduction to Computing**
- \* **CS 711**        **Introduction to Operating Systems**
- CS 3100        Programming Languages

**B. Hardware:**

- \* CS 2200      **Switching theory and Digital Design ( & Lab. )**
- \* CS 2600      **Computer Organization**
- \* CS 321        **Integrated Circuit Electronics ( & Lab. )**
- CS 324        Microprocessors

**C. Theory:**

- \* CS 2800      **Data Structures and Algorithms ( & Lab. )**
- \* CS 240        **Numerical Computing**
- CS 6030        Mathematics Concepts in Computer Science
- CS 6015        Linear Algebra and Random Processes

**D. Applications:**

- \* CS 6777      **Optimization methods for Computer Vision Applications**
- \* CS6464      **Concepts in Statistical Learning Theory**
- \* CS 6350      **Computer Vision**
- \* CS 6710      **Advances in Visual Perception**
- \* CS 6360      **Computer Graphics**
- \* CS 6849      **Modern Trends in Computer Graphics**
- \* CS 6870      **Digital Video Processing**
- \* CS 6340      **Soft Computing**
- \* ID7123      **Machine Intelligence and Brain Research**
- CS 6310        Artificial Neural Networks.

\* - Courses taught so far.

7. Research interests :

Visual Perception - Computer Vision, Digital Image Processing, Pattern Recognition; Digital Video Analytics, Computer Graphics; Biometry; Computational Science and Engineering; Soft Computing, Deep learning and Computational Brain modeling.

8. Guidance { Ph. D. – 6 (+2); / M. S. – 26 (+8); / M. Tech. – 42; / B. Tech. – 9. } :

Degree	Year	Name of the student	Title of the thesis
*Ph. D	2001	R. Balasubramanian	Some mathematical methods and simulation for the reconstruction of 3-D object primitives from arbitrary perspective views.

Ph. D	2010	A. Dyana	Video Object Representation for Content Based Video Retrieval (CBVR).
*Ph. D	2010	T. Mirnalinee	A Multi-stage Framework Based on Salient Features, for Automatic Extraction of Road Network from Satellite Images of Urban Areas.
Ph. D	2012	P. Vinod	Face Recognition across Illumination and Variations, using a Single Training Sample.
Ph. D	2015	Chiranjoy Chattopdhyay	Video Content Representation Using Spatio-Temporal Features for Content-based Video Retrieval
Ph. D	2016	Suranjana Samanta	Domain Adaptation Methods for Visual Object Categorization

One (1) PhD theses submitted, Sept. 2018 – review reports awaited

*M. S.	1997	N. Sudha	Principal Component Neural Networks for Applications in Signal Processing.
M. S.	1998	N. Jagadeesh Babu	Texture Invariant Image Matching.
M. S.	1999	M. Sanjay	Matching Noisy Bitmap Images Based on Distance Transform.
*M.S.	2001	P. Kiran Kumar	Texture Edge Extraction using One Dimensional Processing
*M.S.	2002	S. Ramesh	Edginess Image for Face Recognition
*M. S.	2002	K. Sharat Reddy	Source and System Features for Speaker Recognition
*M. S.	2003	KVS Prasada Reddy	Automatic road detection from satellite images of urban areas.
*M. S.	2004	N.V. Palenkeswara Rao	Sneha-Samuham:A Parallel Computing Model over Grids
*M. S.	2004	P. Vinod	Text-dependent audio-visual biometric person authentication
*M. S.	2004	B. S. Venkatesh	Face detection in still gray image using Neural Networks
*M. S.	2006	A. Pavan Kumar	A WMPCA-based Face Recognition System on Programmable chip
M. S.	2007	Shivani G Rao	Estimation of orientation of an inclined planar texture using DWT: An approach to shape

from texture

- M. S. 2007 Arpita Patra Development of Efficient method for face Recognition and Multimodal biometry
- M. S. 2007 Manish Kalra Framework for the fusion of 3D appearance and 2D shape cues for generic object recognition
- M. S. 2007 P. Deepti Generic object recognition with virtual Manifolds and its application
- M. S. 2007 Lalit Gupta Efficient texture segmentation by integrating region and edge information
- M. S. 2008 Surya Prakash Active Contour Based Foreground Object Segmentation
- \*M. S. 2008 R. Abhilash Video Cut and Paste for 3D Composition – A Method of Video-Based Rendering for Virtual Reality Applications
- M. S. 2009 Sunando Sengupto Issues in 3D Reconstruction from Multiple Views
- \*M. S. 2010 Suranjana Samanta Methods of feature Ranking and Selection For Pattern Classification
- \*M. S. 2010 Suneetha Nadella Object Oriented Framework for Hardening the Linux Kernel
- \*M.S. 2013 Shiva Rudrani Methods for face Recognition from Degraded Images.
- M.S. 2013 Gyanesh Dwivedi Simultaneous Localization And Recognition (SLAR) framework for smart (object-centric) CBIR application.
- M.S. 2015 Sudeshna Ray Salient Object Segmentation in Images
- M.S. 2016 Nitin Gupta Cognitive inspired framework for Smart CBIR Design
- M.S. 2017 Utthara G. Mangai Methods of Decision Fusion for Texture Segmentation and Pattern Classification Tasks.
- M.S. 2017 Prateek Shirivastava GPU Implementation of Virtual Cutting of Deformable Assets in Games
- \*MS 2018 Renu Sharma Methods of Score-level fusion in Multi-biometric Systems
- \*MS 2018 K S Lalitha Unsupervised Methods for Apictorial and Pictorial Jigsaw Puzzle Solving Problems

- M.Tech** 1991 S. Bandyopadhyay An Approach to Determine the 3-D Position and Orientation of a Vehicle.
- M.Tech 1994 M.Kulanthaivel Recognition of 2-D Polygonal Shapes using Pattern Specific Features.
- M.Tech 1994 S. R. Sharma A study of Real Time Tracking of Moving Objects in Noisy Environments.
- M. Tech 1994 S. Sujatha Rendering of Simple 3D Geometrical Shapes.
- \*M.Tech 1994 B. M. B. Tikarya Estimation of Motion and Structure Parameters from a Sequence of Noisy Images using Kalman Filter Approach.
- M. Tech 1995 A. S. Arumugham Errors in Reconstruction of a 3-D Line from Noisy Stereo Images : some Studies and Experimentation.
- M. Tech 1995 Anupam Depth Map Construction from Line Correspondences in Stereo Images.
- \*M. Tech 1995 Babu Thomas Stereo Correspondences using Gabor Logons and Neural Networks.
- \*M. Tech 1996 V. Somanath Compression Techniques for Database Query Project : INQUEST.
- M. Tech 1996 V. K. Beri Solid Object Modeling and Object Management for a 3-D Graphics Package: SOLIDRAW.
- M. Tech 1996 B. Shivaramakrishnan Viewing and Rendering Schemes for a 3-D Graphics Package: SOLIDRAW.
- M. Tech 1996 P. Narasimhamoorthy Raster Snap Function for Vectorization of Image Maps.
- \*M. Tech 1997 Viswam Gampala 3D Graphics Engine – An Object Oriented Approach ( Visual Realism, Graphical User Interface ).
- \*M. Tech 1997 S. Chandramouleeswaran 3D Graphics Engine – An Object Oriented Approach ( Scene Definition and Management ).
- \*M. Tech 1998 Ravindranathan K. R. Unsupervised texture Segmentation Using Gabor Filters.
- \*M. Tech 1998 Amit Kumar Agrawal An Interactive Graphics System for the

	Design of Buildings : A Structured Approach.
M. Tech 1998 H. M. Rafi Assadi	Optimal Filtering Approach and Neural Network Model for Edge Detection.
M. Tech 1998 Hanumanthu R.	Fingerprint identification.
M. Tech 1998 Sunil Kumar	Ridge Orientation based Fingerprint Matching.
*M. Tech 1998 S. Jagadish	Surface Reconstruction from Planar Contours Extracted from MRI Images.
M. Tech 1999 J. N. Subramanyam	Design and Development of an Image Processing Engine on X-Windows.
M. Tech 1999 B. V. J. Manohar	Reconstruction of Road Network from Aerial Images for GIS Applications.
M. Tech 1999 J. Rajamohan	Raster Snap function for Vectorization of Bitmap Images.
M. Tech 1999 K. S. Praneshwar Rao	Organization of Video database for Browsing and Retrieval.
*M. Tech 1999 V. Kondala Rao	Speaker Clustering using SOM.
M. Tech 1999 D. V. Bhaskar Reddy	Development of a Software Tool for the Aid of Cricket Umpires.
M. Tech 1999 G. Vidyasagar	Person Authentication Using Audio and Video Data.
M. Tech 2006 Pragya Minz (Dual)	Navigation tool in 3D environment
M. Tech 2008 M. P. Subramanian	Content Based Video Retrieval Based on Shape and Motion Trajectory of Video Objects.
M. Tech 2008 Krishna Biswas	Design and Implementation of a Game Description language using OpenGL
M. Tech 2009 Nimit Jain (Dual)	3-D Modeling and Realistic Image Based Rendering
M. Tech 2010 Naren Krishna (Dual)	LDA Based Modular Eigen Analysis for Efficient Face Recognition
*M. Tech 2010 Shruti Srivastava (Dual)	Text-to-Touch Converter System For Visually Challenged

M. Tech 2010 (Dual)	Harshita Khanna	Effect of Defocusing in Estimation of Orientation of Planar Textured Surface
M. Tech 2011	Sandeep Kumar Muddam	Game Description Language (GDL) - A Scripting Language for OpenGL based interactive Game Design
M. Tech 2012 (Dual)	Sai Sandeep	Multi-view Face Recognition using subband faces
M. Tech 2013	Amit Kumar Marya	Spatio temporal modeling for application of video analytics
M. Tech 2013	Ankit Shrivastava	Biped Character Locomotion and Control
M. Tech 2013 (Dual)	Eswar Sai Putti	Segmentation of Multiple Foreground Objects in a Scene
M. Tech 2014 (Dual)	Tirumarai Selvan	Domain Adaptation for Object Categorization
M. Tech 2016 (Dual)	Venu Gopal Vangala	Neuron Cell Detection in Fluorescent Mouse Brain Scans
M. Tech 2016 (Dual)	S. Vishnu Vardhan Reddy	Classification of Subsurface Compounds Using Hyper Spectral Imaging
<b>B. Tech</b> 1995	Praveen Kumar	Image Compression techniques : A comparative study.
*B. Tech 1998	Ajay Chakraborty	Traffic Flow Simulator.
B. Tech 1998	Chandrasekhar Yalangi	A Graphical Tool for the Aid of Cricket Umpires.
*B. Tech 2007	J. Deepak	Procedural Texture Synthesis and 3D Surface Wrapping
B. Tech 2008	Mahesh Kumar Reddy	A Real-time Face Recognition System using Modular PCA approach
B. Tech 2009	Ravi Teja	Image Enhancement, Segmentation and Pose Estimation in Videos.
B. Tech 2010	N. Hari Prasad	Study of Foreground Image Segmentation Using Support Vector Machines
B. Tech 2012	SASI INGUVA	Tracking of Multiple Objects using Segmentation and Object Detection
B. Tech 2017	K. Riwtika	Image Scene Ontology Creation for Scene Representation



\* -- Guided jointly with another faculty member.

Currently, guiding **three (3) Ph. D and Eight (8) M.S. Scholars.**

9. Courses introduced (mostly new\*) and modified:

<b>CS 6350</b>	<b>Computer Vision*</b>	<b>(1994, modified 2005/12/18)</b>
<b>CS 6710</b>	<b>Advances in Visual Perception*</b>	<b>(July 2005)</b>
<b>CS 6870</b>	<b>Digital Video Processing*</b>	<b>(Oct. 2008)</b>
<b>CS 6489</b>	<b>Modern Trends in Computer Graphics*</b>	<b>(July 2012)</b>
<b>CS 6360</b>	<b>Computer Graphics</b>	<b>(modified 2011/18)</b>
<b>CS 6777</b>	<b>Optimization Methods for Computer Vision Applications*</b>	<b>(June 2014)</b>
<b>CS 6464</b>	<b>Concepts in Statistical Learning Theory*</b>	<b>2016 (modified 2018)</b>
<b>ID7123</b>	<b>Machine Intelligence and Brain Research*</b>	<b>2017</b>

10. Lab/Design/Development Activity :

- (i) **VISUALIZATION and PERCEPTION Laboratory** was established and set up in August 2004;  
(URL: //www.cse.iitm.ac.in/~vplab/).
- (ii) Faculty in-charge of departmental computing facility (DCF), from 2003-2005.
- (iii) Faculty in-charge - Classroom Electronic facility – PC + projection + PA system; 2004-2011.

11. Projects undertaken:

(a) **Sponsored:**  
**(Prior to year 2004)**

Agency	Value	Title	Other Coordinators	Year
ONR, USA	Rs. 19.00 Lakhs	&&	Prof. B. Yegnanarayana	1998-2001
ISRO, INDIA	Rs. 7.80 Lakhs	##	Prof. B. Yegnanarayana, Dr. Koshy Varghese	1997-2000

INTEL ASIA Rs. 60.00 Lakhs @@ Prof. B. Yegnanarayana 1999-2004  
 Dr. C. Chandrasekhar  
 Dr. Hema A Murthy

ISRO, INDIA Rs. 1.00 Lakhs \*\* Prof. B. Yegnanarayana 1998-9

&& - Information Recovery from Partial Data for Image Processing Applications.

## - Development of techniques for Classification of Urban Features from remote Sensed Data for use in GIS Applications : A Multi-disciplinary approach.

@@ - Development of Phonetic Engine for Speech in Indian Languages.

\*\* - Neural Network Models for Health Monitoring of Propulsion Systems.

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Since year 2004:

Agency	Value	Title	Whether as PI	Year
MHRD (GOI)	Rs. 20.80 Lakhs	&&	YES	2004-6
DRDO (GOI)	Rs. 10.00 Lakhs	\$\$	YES	2004-6
DRDO (GOI)	Rs. 22.92 lakhs	**	YES	2004-6
MCIT (GOI)	Rs. 39.60 Lakhs	%%	NO	2005-7
DST (GOI)	Rs. 14.04 Lakhs	§§	NO	2005-7
DRDO (GOI)	Rs. 9.85 Lakhs	@@	YES	2006-7
DRDO (GOI)	Rs. 9.95 Lakhs	##	YES	2007-9
MCIT	Rs. 40.4 Lakhs	++	NO	2008-11

(GOI)

ICMR (Indo-German)	Rs. 15.00 lakhs	!!	NO	2008-10
MCIT (GOI)	Rs. 104.0 Lakhs	~~	NO	2009-12
MHRD (IMPRINT-MHRD/DRDO)	Rs. 187.0 Lakhs	ΘΘ	Yes	2017-20

- && - Multi-modal biometrics based secured access system using face and fingerprint recognition.
- \$\$ - SAR image exploitation, Classification of Man-made and Natural regions, Automatic Target Detection.
- \*\* - Probabilistic Classification of Satellite Images to Obtain Landform Patterns.
- %% - Minimal Object Oriented Linux.
- §§ - Integration Knowledge system on soil Nutrient management through Image Processing of Chromatograms.
- @@ - Recovery of 3D shapes based on multiview textures.
- ## - Combining Classifiers using Decision Fusion: An approach to Probabilistic Landform Segmentation.
- ++ - Research and Development of Multi-camera algorithms for security and surveillance.
- !! - Telemedicine station for Rural Health Monitoring and diagnosis of epidemic diseases.
- ~~ - Service Oriented Architecture and its implementation for the Linux Kernel, middleware (NRCFOSS Phase II).
- ΘΘ - Scene Understanding for Identification of covert Geo-locations in a scene, using a Hyper-Classifier based Visual Intelligent system.

**(b) Consultancy :**

Agency	Value	Title	Other Coordinators	Year
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PGG, Nuenkirchen, Germany.	Rs. 2.5 lakhs	**	Prof. B. Yegnanarayana (PI)	1994-6
HCL Technologies, India	Rs. 0.45 Lakhs	&&	NIL	2000-01
Metricone Technologies, India	Rs. 1.0 Lakhs	@@	NIL	2001
HCL Technologies, India.	Rs. 0.40 Lakhs	%%	NIL	2001
ATB, (GOI) Secunderabad	Rs. 15.00 lakhs	++	Dr. Anurag Mittal	2008-9
DRDO (GOI)	Rs. 9.98 Lakhs	""	Prof. T. S. Natarajan (Deptt. of Phys.)	2009-11
DRDO (GOI)	Rs. 45.00 Lakhs	##	Dr. Sutanu Chakraborti	2011-14

- \*\* - Image Processing algorithms for GIS.
- && - Algorithms for Simulation and Image Analysis
- @@ - Algorithms for Fingerprint Identification
- %% - Traffic Signal Identification
- ++ - Sizing of Sensors for Tracking Trainee Movements in Simulation Arena.
- |""| - Smart segmentation of objects in images
- ## - Localization and Identification of targets in Satellite Images using Feature based approaches.

## 12. Text Books, Monographs, etc. Authored :

- Co-editor of the LNCS (Springer) proceedings of the 8th International Conference on Human Computer Interaction, IHCI 2016, Pilani, India, December 12-13, 2016.
- Co-editor of the IEEE proceedings of the Fourth National Conference on "Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG)", IIT Jodhpur, Rajasthan,

India, 18-21 December 2013.

- Co-Editor of the Proceedings of International Conference on Multimedia Processing and Systems (ICMPS '2000), IIT Madras, Chennai, India, during August 13-15, 2000.

### 13. CEC programs and Conferences organized :

- (a) CEC Short-term course on “**Computer Graphics and Image Processing**”, conducted at IIT Madras during 18-19th, April, 1997, for Industries and Academic Institutions, with Dr. Hema A Murthy.
- (b) Co-convener of the **International Conference on Multimedia Processing and Systems**, IIT Madras, Chennai, during August 13-15, 2000.
- (c) Faculty convener on the **IBM-day** event held in IIT Madras, on August 11, 2007; TCS Research Day at IIT Madras, Oct. 2016.
- (d) DRDO-sponsored International Workshop (CEC program) on “**DIGITAL VIDEO ANALYTICS and PROCESSING (DVAP-2012)**”, held at IC&SR, IIT Madras, 21-22, Dec. 2012.
- (e) **Program co-chair of NCVPRIPG-13**, held at IIT Jodhpur, Dec. 2013.
- (f) **Faculty Convener of TCS Interaction day event, held at IIT Madras, Oct. 01, 2016; IC&SR, IIT Madras.**
- (g) **Program co-chair of IHCI-2016**, held at CEERI/BITS Pilani, Dec. 2016.

### 14. Awards/Honours Received & **Highlights**:

(i) **Winner (best design) at the design contest of "SOPC World" event on Embedded Systems and VLSI systems**, conducted by ALTERA in Bangalore, 2004; jointly with Dr. V. Kamakoti and Pavan Kumar.

(ii) **Best paper award** at National Conference on Image Processing (NCIP '05), Bangalore, for Vinod Pathangay and Dr. Sukhendu Das for their work published in the paper entitled "Exploring the use of selective Wavelet Subbands for PCA based Face Recognition", March 2005.

(iii) **Best paper** at National Conference on Computer Vision, AI and Robotics (NCCVAIR '07), at Chennai, awarded to Sunando Sengupta and Dr. Sukhendu Das for their work published in the paper entitled "Error Norm for Determining 3D Structure from Different Appearances of an Object", October 2007.

(iv) "An integrated multi-stage framework for automatic road extraction from high resolution satellite imagery" published in Journal of Indian Society of Remote Sensing 39 (1): 1-26 Authors: Mirnalinee, TT, Das, S and Varghese, K; **is adjudged as the best paper**. The award ceremony was held during the inaugural session of National Symposium on "Space technology for food and environment security" at NASC complex, Devi Prakash Marg near IARI, New Delhi on 5th Dec. 2012.

(v)

**"VIDLOOKUP: A web-based online CBVR system for query video shots"**

**Among the top 12 selected Demos, at the (IEEE) International Conference on Computer Vision (IEEE-ICCV) 2011; rated A\*; h5-index - 89; Barcelona, Spain.**

- (vi) Finalist (among the top 9 short-listed papers) for the best paper award, at the IEEE-ICIP'14 Conference, held at Paris, France, Oct. 2014.
- (vii) **Best student paper award** in 16th International Conference on Advanced Concepts for Intelligent Vision Systems (ACIVS), Poitiers, France, 24-27 September, 2018.

15. Professional Societies involved: IEEE, USA (Computer and SMC).

Reviewed technical papers for the following international journals (from 2004 till date):

- (i) **IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)**
- (ii) **IEEE Transactions on Image Processing (T-IP)**
- (iii) **IEEE Transactions on Systems, Man and Cybernetics (T-SMC)**
- (iv) **International Journal of Computer Vision (IJCV)**
- (v) **Pattern Recognition Letters (PRL).**
- (vi) **Journal of Information Fusion**
- (vii) **International Journal of Biomedical Imaging**
- (viii) **Signal Processing**
- (ix) **Pattern Recognition**
- (x) **Neuro-Computing**

- (xi) **Fuzzy Sets and Systems**
- (xii) **Image and Vision Computing**
- (xiii) **IET – Transactions on Image processing**
- (xiv) **IET – Computer Vision**

16. Research work in progress – planned/unplanned:

- (a) Analyzing video sequence for **Prediction, tracking, estimation, detection and reconstruction of moving objects and CBVR** (representation, event analysis and Retrieval)
- (b) **Deep learning** models for face, object and event categorization.
- (c) **Face Recognition** in unconstrained environments and from degraded (low quality) snaps.
- (d) **Computational models and structure analytics from Brain scan data.**
- (e) **GDL** – a new “Game Description language”, with OpenGL game engine modules
- (f) **Foreground salient object detection**, from images and video
- (g) Generic Scene classification, using perceptual models
- (h) **Edge preserving super-resolution.**
- (i) **Smart object-centric Segmentation** based on human perceptual cues – SLAR based.
- (j) **Domain Adaptation** for visual object categorization and recognition.
- (k) Video Analytics; Video Informatics; Intelligent Eye **and SIXTH SENSE INTELLIGENCE.**

17. List of research publications:

**A. JOURNAL (Published/Accepted)**

1.1). "Thresholding for Edge Extraction of Intensity Images"; Jayanta Mukherjee, S. Das and B. N. Chatterji; Publication of Indian Journal of Engineers, Annual Number 1992; pp 20-29.

1.2). "Cut-off Frequencies of Transmission Lines Consisting of Pair of Cylinders"; B. N. Das, S. B. Chakraborty and S. Das ; **IEEE Transactions on Microwave Theory and Techniques**, Vol. 44, No: 11, Nov., 1996, pp. 2110-2112.

1.3). "3D Tool Wear Measurement and Visualization using Stereo Imaging"; Karthik A, S. Chandra, B. Ramamoorthy and S. Das; International Journal of Machine Tools and Manufacture, Vol. 37, No. 11, 1997, pp. 1573-1581.

1.4). "Evaluation of characteristic impedance of twin-wire transmission line insulated by multilayer dielectric " ; S. B. Chakraborty, B. N. Das, S. Das and R. Bhattacharjee ; International Journal of Electronics, Vol. 83, No. 5, pp. 615-622, 1997.

1.5). "Analysis of a pair of dielectric coated cylinders above a ground plane using conformal transformation " ; S. Das and B. N. Das ; IETE (India) Journal of Research, Vol. 44, NO. 3, May-June 1998, pp 99-103.

1.6). "Capacitance of Transmission Line of Parallel Cylinders with Variable Radial Width"; B. N. Das, S. Das and Debashis Parida; **IEEE Transactions on Electromagnetic Compability**, Vol. 40, No. 4, Nov. 1998, pp 325 - 330.

1.7). "Analysis of a pair of dielectric coated cylinders above a Dielectric Substrate"; B. N. Das and S. Das; IETE journal of Research; Vol. 46, No. 3, May-June 2000, pp 157-161.

1.8). "Capacitance matrix of a pair of Dielectric Coated Cylinders of unequal Diameters above a ground plane"; B. N. Das, Debashis Parida, S. Das and G. Panda"; International Journal of Electromagnetics; Vol. 21, No. 3, April 2001, pp 231-245.

1.9). "Error Analysis in Reconstruction of a Line in 3-D from Two arbitrary perspective Views"; R. Balasubramanian, Sukhendu Das and K. Swaminathan, International Journal of Computer Mathematics, Vol. 78, No. 2, Feb. 2001, pp 191-212.

1.10). "Quantization error in stereo imaging systems"; R. Balasubramanian, Sukhendu Das, S. Udayabaskaran and K. Swaminathan; International Journal of Computer Mathematics, Vol. 79, No: 6, July, 2002, pp 671-691.

1.11). "Reconstruction of quadratic curves in 3-D from two or more perspective views"; R. Balasubramanian, Sukhendu Das and K. Swaminathan; Mathematical problems in Engineering, Vol. 8, No. 2, 2002, pp 207-219.

1.12). "Simulation studies for the performance analysis of the reconstruction of a line in 3-D from two arbitrary perspective views using two plane intersection method", R. Balasubramanian, Sukhendu Das and K. Swaminathan, International Journal of Computer Mathematics, Vol. 80, No. 5, 2003, pp. 559-571.

1.13). "Bestimmung der Objektform durch Bildanalyse der Oberfluentextur-Merkmalsgewinnung mittels M-Kanal Wavelet-Transformation"; Thomas Greiner and Sukhendu Das, Journal of "Automatisierungstechnik", Oldenbourg Publishers (Germany): Vol. 54 (10), Oct., 2006, pp 475-485.

1.14). "System-on-Programmable-Chip Implementation for online Face Recognition", A. Pavan Kumar, V. Kamakoti, Sukhendu Das, **Pattern Recognition Letters (Elsevier; Impact Factor: 1.3)**, Volume 28, No. 3,



February 2007, pages: 342-349.

1.15). "Indoor Vs. Outdoor Scene Classification using Probabilistic Neural Network", Lalit Gupta, Vinod Pathangay, Arpita Patra, A. Dyana and Sukhendu Das, EURASIP Journal of Advances in Signal Processing (JASP) - Special issue on "Image Perception" (**Impact Factor: 0.885**), Vol. 2007, pp 1-10.

1.16). "A method of shape recognition using group delay function", Sreyasee D.B., Sukhendu Das and Amitava Datta, International Journal of Imaging Science and Engineering (IJISE, GA, USA, ISSN:1934-9955,), Vol.1, No.3, July 2007, pp. 90-95,.

1.17). "SnakeCut: An Integrated Approach Based on Active Contour and GrabCut for Automatic Foreground Object Segmentation"; Surya Prakash, R. Abhilash and Sukhendu Das; Special Issue on Vision and Multimedia Processing, in *Electronic Letters on Computer Vision and Image Analysis (ELCVIA)*, Vol. 6, No. 3, December 2007, pp 13-29.

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2.80). "Inter-Domain Cluster Mapping And GMCV based Transformation For Domain Adaptation", Suranjana Samanta and Sukhendu Das; 5th International Conference (LNCS) on Pattern Recognition and Machine Intelligence (PreMI-2013), pp 74-81, December 10-14, 2013, Kolkata, India, DOI: 110.1007/978-3-642-45062-4\_9. Work partly supported by TCS Innovation Lab (India).

2.81). "Fast Area of Contact Computation for Collision Detection of a Deformable Object using FEM", Prateek Shrivastava and Sukhendu Das; National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG-2013), Jodhpur, India, 19-21 December 2013.

2.82). "STAR: A Content Based Video Retrieval System for Moving Camera Video Shots", Chiranjoy Chattopadhyay and Sukhendu Das; National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG-2013), Jodhpur, India, 19-21 December 2013.

2.83). "Spatial Variance of Color and Boundary Statistics for Salient Object Detection", Sudeshna Roy and Sukhendu Das; National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG-2013), Jodhpur, India, 19-21 December 2013.

2.84). "Stable Biped Locomotion using Improved Proportional Derivative Controller", Ankit Shrivastava, Prateek Shrivastava, Sukhendu Das and Suranjana Samanta; National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG-2013), Jodhpur, India, 19-21 December 2013.

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2.88). "Dictionary based Framework for Face Recognition, Designed Mutually for Single Training Sample (STS) and Degraded Set (DS)", Renu Sharma, Sukhendu Das and Padmaja Joshi; In Proceedings of the International Joint Conference on Biometrics (IJCB-2014), Clearwater, Florida, USA, 29 September - 2 October, 2014.

2.89). "Unsupervised Domain Adaptation Using Manifold Alignment For Object And Event Categorization", Suranjana Samanta and Sukhendu Das; In Proceedings of the IEEE 21st **International Conference on Image Processing (ICIP-2014)**, Paris, France, October 27-30, 2014. Work partly supported by TCS Innovation Lab (India); *(among finalists of best paper award, within top 9 papers)*.

2.90). "Hierarchy of Visual Features for Object Recognition", Nitin Gupta, Sukhendu Das and Sutanu Chakraborti; In Proceedings of the **IEEE 21st International Conference on Image Processing (ICIP-2014)**, Paris, France, October 27-30, 2014.

2.91). "Physics Based Virtual Cutting Using J-integral method for Gaming applications", Prateek Shrivastava and Sukhendu Das; In 7th International ACM SIGGRAPH Conference on Motion in Games (MIG - 2014), Los Angeles, California, USA, November 6-8, 2014.

2.92). "GPU Based Particle Coding Scheme for Virtual Cutting of Meshfree Particle System", Prateek Shrivastava and Sukhendu Das; In Proceedings of the 10th International Symposium on Visual Computing (ISVC-2014), Las Vegas, Nevada, USA, December 8-10, 2014.

2.93). "Face Recognition in Surveillance Conditions with Bag-of-words using Unsupervised Domain Adaptation", Samik Banerjee, Suranjana Samanta and Sukhendu Das; ACM proceedings of the 9th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP-2014), IISC Bangalore, Karnataka, India, December 14-18, 2014.

2.94). "Method of particle coding for Meshfree cutting of soft objects", Prateek Shrivastava and Sukhendu Das; ACM proceedings of the 9th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP-2014), IISC Bangalore, Karnataka, India, December 14-18, 2014.

2.95). "Revealing What to Extract from Where for Object-Centric Content Based Image Retrieval (CBIR)", Nitin Gupta, Sukhendu Das and Sutanu Chakraborti; ACM proceedings of 9th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP-2014), IISC Bangalore, Karnataka, India, December 14-18, 2014.

2.96). "Multi-criteria Energy Minimization with Boundedness Edge-density and Rarity for Object Saliency in Natural Images", Sudeshna Roy and Sukhendu Das; ACM proceedings of the 9th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP-2014), IISC Bangalore, Karnataka, India, December 14-18, 2014.

2.97). "Domain Adaptation Using Weighted Sub-space Sampling For Object Categorization", Tirumarai Selvan, Suranjana Samanta and Sukhendu Das; IEEE proceedings of 8th International Conference on Advances in Pattern Recognition (ICAPR-2015), ISI Kolkata, India, January 4-7, 2015.

2.98). "Extracting Information from a Query Image, for Content Based Image Retrieval", Nitin Gupta, Sukhendu Das and Sutanu Chakraborti; IEEE proceedings) of 8th International Conference on Advances in Pattern Recognition (ICAPR-2015), ISI Kolkata, India, January 4-7, 2015.

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2.101). "Cognitive Inspired WOR Framework to Reveal Image Semantics, for Efficient Content Based Image Retrieval", Nitin Gupta, Sukhendu Das and Gyanesh Dwivedi; In ACM proceedings of the International Conference on Perception and Machine Intelligence (PerMin-2015), Kolkata, India, February 26-27, 2015.

2.102). "Score Normalization in Multimodal Systems using Generalized Extreme Value Distribution", Renu Sharma, Sukhendu Das and Padmaja Joshi, 26th **British Machine Vision Conference (BMVC '15)**, Swansea, UK, Sept. 7 - 10, 2015.

2.103). "Rank Level Fusion in Multibiometric Systems", Renu Sharma, Sukhendu Das and Padmaja Joshi, in 5th National Conference on Computer

Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG '15), IIT Patna, India, December 16-19, 2015.

2.104). "Analysis of Cre:H2B-GFP Labeled GABAergic Interneurons Data from the Mouse Brain Architecture Project", Girraj Pahariya, Venu Gopal Vangala, Sukhendu Das, Partha P Mitra and Daniel Ferrante, In Inaugural Workshop on Computational Brain Research, IIT Madras, India, January 4-8, 2016.

2.105). "Automated Detection of GFP Labelled Nuclei in Whole-Brain Light-Microscopic Data sets for Mouse with High Precision and Recall", Sukhendu Das, Venu V. Gopal, Girraj Pahariya, Daniel D. Ferrante and Partha P. Mitra; Accepted in Society for Neuroscience Workshop, San Diego, USA, Nov 12-16, 2016.

2.106). "Soft-Margin Learning for Multiple Feature-Kernel Combinations With Domain Adaptation, for Recognition in Surveillance Face Dataset", Samik Banerjee and Sukhendu Das; In Workshop on Biometrics, 29th IEEE Conference on **Computer Vision and Pattern Recognition (CVPRW)** Workshops, Las Vegas, USA, June 26-30, 2016.

2.107). "Simultaneous Reconstruction of Multiple Hand Shredded Content-less Pages using Graph-based Global Reassembly", Lalitha K S, Sukhendu Das, Arun Menon and Koshy Varghese; In 2nd Workshop on Computer Vision Applications, Tenth Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIPW) Workshops, IIT Guwahati, India, December 18-22, 2016.

2.108). "Eigen Domain Transformation for Soft-margin Multiple Feature-Kernel Learning for Surveillance Face Recognition ", Samik Banerjee and Sukhendu Das; In 2nd Workshop on Computer Vision Applications, 10th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIPW) Workshops, IIT Guwahati, India, December 18-22, 2016.

2.109) "Video Stabilization by Procrustes Analysis of Trajectories"; Geethu Miriam Jacob and Sukhendu Das; In Tenth Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP-2016), IIT Guwahati, India, December 18-22, 2016. DOI:10.1145/3009977.3009989

2.110). "Graph-based Clustering for Apictorial Jigsaw Puzzles of Hand Shredded Content-less Pages"; Lalitha K S, Sukhendu Das, Arun Menon, Koshy Varghese; In 8th International Conference on Intelligent Human Computer Interaction (IHCI-2016), CSIR-CEERI, BITS Pilani, India, December 12-13, 2016.

2.111). "Deep Learning Methods for the Automated Detection of cells in Nissl Stained Mouse Brain Scans", Girraj Pahariya, Madhumita Harish, Sukhendu Das, Jayakishan Jayakumar and Partha P Mitra, In Second Workshop on Computational Brain Research, IIT Madras, India, January 3-7, 2017.

2.112). "Moving Object Segmentation in Jittery Videos by Stabilizing Trajectories Modeled in Kendall's Shape Space", Geethu Miriam Jacob and Sukhendu Das, 28th **British Machine Vision Conference (BMVC '17)**, London, UK, September 4-7, 2017.

2.113). "Performance of Deep Learning Algorithms vs. Shallow models, in extreme conditions - some empirical studies", Samik Banerjee, Prateep Bhattacharjee and Sukhendu Das, (oral presentation) 7th International Conference on Pattern Recognition and Machine Intelligence (PReMI'17), ISI Kolkata, India, December 5-8, 2017.

2.114). "Two-Stream Convolutional Network with Multi-level Feature Fusion for Categorization of Human Action from Videos", Prateep Bhattacharjee and Sukhendu Das; (oral presentation) 7th International Conference on Pattern Recognition and Machine Intelligence (PReMI'17), ISI Kolkata, India, December 5-8, 2017.

2.115). "Temporal Coherency based Criteria for Predicting Video Frames using Deep Multi-stage Generative Adversarial Networks", Prateep Bhattacharjee and Sukhendu Das, In the 31st Conference on **Advances in Neural Information Processing Systems (NIPS) [A\* | h5-index - 101]**, Long Beach, California, United States of America, December 4-9, 2017.

2.116). "PosIX-GAN: Generating multiple poses using GAN for Pose-Invariant Face Recognition.", Avishek Bhattacharjee, Samik Banerjee and Sukhendu Das, In Geometry Meets Deep Learning (GMDL), 15th European Conference on Computer Vision Workshops (ECCVW), Munich, Germany, September 8-14, 2018.

2.117). "Context Graph based Video Frame Prediction using Locally Guided Objective", Prateep Bhattacharjee and Sukhendu Das, In Anticipating Human Behavior (AHB), 15th European Conference on Computer Vision Workshops (ECCVW), Munich, Germany, September 8-14, 2018. [*Oral presentation*]

2.118). "GreenWarps: A Two-Stage Warping Model for Stitching Images using Diffeomorphic Meshes and Green Coordinates", Geethu Miriam Jacob and Sukhendu Das, In Women in Computer Vision (WiCV), 15th European Conference on Computer Vision Workshops (ECCVW), Munich, Germany, September 8-14, 2018.

2.119). "Deep Domain Adaptation for Face Recognition using images captured from surveillance cameras", Samik Banerjee, Avishek Bhattacharjee and Sukhendu Das, In IEEE Conference on Biometric Special Interest Group (BIOSIG), Darmstadt, Germany, September 27-28, 2018.

2.120). "Large Parallax Image Stitching Using an Edge-Preserving Diffeomorphic Warping Process", Geethu Miriam Jacob and Sukhendu Das, In



International Conference on Advanced Concepts for Intelligent Vision systems (ACIVS), LNCS (Springer), Poitiers, France, September 24-27, 2018. DOI: 10.1007/978-3-030-01449-0\_44. **[Best Student Paper Award]**

2.121). "Panorama from Representative Frames of Unconstrained Videos Using DiffeoMeshes.", Geethu Miriam Jacob and Sukhendu Das, Accepted in 14th Asian Conference on Computer Vision (ACCV), Perth, WA, Australia, December 2-6, 2018.

2.122). "Predicting Video Frames using Feature Based Locally Guided Objectives.", Prateep Bhattacharjee and Sukhendu Das, Accepted in 14th Asian Conference on Computer Vision (ACCV), Perth, WA, Australia, December 2-6, 2018. [*Oral presentation*]

2.123). "SpoofNET: Resolving facial makeup based spoofs.", Avishek Bhattacharjee, Samik Banerjee and Sukhendu Das, Accepted in 11th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), Hyderabad, India, December 18-22, 2018.

2.124). "DP-GAN: Dual Pathway Generative Adversarial Network for Face Recognition in degraded scenarios.", Avishek Bhattacharjee, Samik Banerjee and Sukhendu Das, Accepted in 11th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), Hyderabad, India, December 18-22, 2018.

2.125). "A Bottom-Up and Top-Down Approach for Image Captioning using Transformer.", Sandeep Narayan Parameswaran and Sukhendu Das, Accepted in 11th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), Hyderabad, India, December 18-22, 2018 (*oral Presentation*).

2.126). "VidSeg-GAN: Generative Adversarial Network for Video Object Segmentation Tasks.", Saptakatha Adak and Sukhendu Das, Accepted in 11th Indian Conference on Computer Vision, Graphics and Image Processing (ICVGIP), Hyderabad, India, December 18-22, 2018.

18. Additional Information and responsibilities - academic and extra-curricular:

- i) **Editorial Board of Sadhana (Springer series) journal.**
- ii) **Program Co-chair of NCVPRIPG-13** Conference, held at IIT Jodhpur, Dec. 18-21, 2014.
- iii) **Chairman, PRSG review committee for the Ministry of Communications and Information Technology (GOI)**

- project** entitled “Robust Watermarking of Digital Images using Wavelet like Transforms for Image Security”; Univ. of Madras, Chennai, India, 2005-08.
- iv) **Chairman, PRSG review committee for the Ministry of Communications and Information Technology (GOI)** **project** entitled “An investigation on the impact of encoding schemes in Steganography and Watermarking algorithms”; Andhra University, Vishakapatnam, India, 2009-10.
  - v) **Chairman, PRSG review committee for the Ministry of Communications and Information Technology (GOI)** project entitled “Development of algorithms for matching near-infrared facial images to visible light images in uncontrolled scenarios” being implemented by **IISc Bangalore**, 2016-17.
  - vi) Member of PRSG review committee for the **Ministry of Communications and Information Technology (GOI)** project entitled “Research on Multimodal Context Switching using multi-spectral Face, Periocular and Iris recognition at a distance” being implemented by **IIIT Delhi**; 2014-17.
  - vii) Member, PRSG review committee for the **Ministry of Communications and Information Technology (GOI)** **project** entitled “Design of New Iris Recognition System for Personal Authentication with Orthogonal Polynomials Model” by Bharathidasan Institute of Technology, Anna University, Tiruchirappalli; India, 2009-11;
  - viii) Member, review committee for the **DST project** entitled “Video Surveillance”, at IISC Bangalore, since 2012.
  - ix) Member of the **GIES-IMINT project review board in ADE, DRDO, Bangalore**, 2004-2006.
  - x) Member of the DRDO-RAC Recruitment and Assessment Committee, DRDO (Delhi), since 2006.
  - xi) NPTEL (MHRD program) video lecture series in “Computer Graphics” (available in Doordarshan – Ekalvya Channel and now on Youtube), completed in Sept. 2005; ***9th most viewed Video lecture on Youtube, 2010; most viewed (in 2009) among all courses in Computer Science and Engg. field.***
  - xii) NPTEL-Phase II - (a) Discipline (course) Coordinator in Computer Science and Engg., IIT Madras, Chennai – 36, since 2009; (b) Co-instructor of the video lecture series in “Pattern Recognition”.
  - xiii) CSE faculty incharge of classrooms, Course Allocation, TA

Allocation, QIP/Sponsored interviews etc., 2006-16..

- xiv) Department (CS&E) faculty representative in the Institute Board of Academic Courses (*BAC member, Deptt. Of CS&E, IIT Madras*), 2005-2007.
- xv) Department (CS&E) Faculty representative in the IIT time-table committee, 2004-2007.
- xvi) Department (CS&E) faculty representative in the Institute Board of Training and Placement (BT&P *member, Deptt. Of CS&E, IIT Madras*), 2008-09, 2011-2013.
- xvii) Appointed as the *General Secretary of the Staff Club, IIT Madras*, 2004-2006; Also, served earlier as executive committee member and Sports secretary of Staff Club, IIT Madras.

19. Top 10 significant Publications, with most Citations (Nov. 2018):

<u>Title</u>	<u>Cited by</u>	<u>Year</u>
<a href="#">A survey of decision fusion and feature fusion strategies for pattern classification</a> UG Mangai, S Samanta, <b>S Das</b> , PR Chowdhury IETE Technical review 27 (4), 293	<b>155</b>	2010
<a href="#">Use of salient features for the design of a multistage framework to extract roads from high-resolution multispectral satellite images</a> <b>S Das</b> , TT Mirnalinee, K Varghese Geoscience and Remote Sensing, IEEE Transactions on 49 (10), 3906-3931	<b>130</b>	2011
<a href="#">Real-time upper-body human pose estimation using a depth camera</a> HP Jain, A Subramanian, <b>S Das</b> , A Mittal Computer Vision/Computer Graphics Collaboration Techniques, 227-238	<b>47</b>	2011
<a href="#">System-on-programmable-chip implementation for on-line face recognition</a> A Pavan Kumar, V Kamakoti, <b>S Das</b> Pattern Recognition Letters 28 (3), 342-349	<b>32</b>	2007
<a href="#">MST-CSS (Multi-Spectro-Temporal Curvature Scale Space), a novel spatio-temporal representation for content-based video retrieval</a> A Dyana, <b>S Das</b> Circuits and Systems for Video Technology, IEEE Transactions on 20 (8), 1080 ...	<b>25</b>	2010
One Dimensional processing of Images; PK Kumar, S Das, B. Yegnanarayana; ICMPS, IIT Madras	<b>26</b>	2000
<a href="#">Capacitance of dielectric coated cylinder of finite axial length and truncated cone isolated in free space</a> SB Chakrabarty, <b>S Das</b> , BN Das Electromagnetic Compatibility, IEEE Transactions on 44 (2), 394-398	<b>22</b>	2002
<a href="#">Trajectory representation using Gabor features for motion-based video retrieval</a> A Dyana, <b>S Das</b> ; Pattern Recognition Letters 30 (10), 877-892	<b>19</b>	2009
<a href="#">Integrating region and edge information for texture segmentation using a modified constraint satisfaction neural network</a>	<b>15</b>	2008

<u>Title</u>	<u>Cited by</u>	<u>Year</u>
L Gupta, UG Mangai, <b>S Das</b> ; Image and Vision Computing 26 (8), 1106-1117		
<a href="#">Enhancing decision combination of face and fingerprint by exploitation of individual classifier space: An approach to multi-modal biometry</a> A Patra, <b>S Das</b> ; Pattern Recognition 41 (7), 2298-2308	<b>16</b>	2008

Google Scholar Citation (Nov. -2018):



Source: <http://scholar.google.co.in/citations?user=nqDmEHUAAAAJ>

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### REFERENCES:

- (i) Prof. Y. V. Venkatesh (FNA (*INSA*); Ex-Dean, IISC Bangalore)  
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(iii) Prof. Bhabatosh Chanda (FNAE, FNASc.)  
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## **Brief Biodata**

Dr. **Sukhendu Das** is currently employed as a Professor in the Deptt. Of Computer Science and Engg., IIT Madras, Chennai, India. He completed his B.Tech degree from IIT Kharagpur in the Deptt. Of Electrical Engg. in 1985 and M. Tech Degree in the area of Computer Technology from IIT Delhi in 1987. He then obtained his Ph.D degree from IIT Kharagpur in 1993. His current areas of research interests are: Visual Perception, Computer Vision: Digital Image Processing and Pattern Recognition, Computer Graphics, Artificial Neural Networks, Computational Science and engineering, Soft Computing, Deep Learning and Computational brain modeling. Dr. Sukhendu Das has been a faculty of the Deptt. of CS&E, IIT Madras, INDIA since 1989. He has worked as a visiting scientist in the University of Applied Sciences, Pforzheim, Germany, for post-doctoral research work, from Dec. 2001 till May 2003; and as a visiting fellow/scientist in the Univ. of UWA, Perth, Australia, during June-Aug. 2006, and July-Sept. 2008. He has guided Six (currently guiding 2) Ph. D students, 26 (currently guiding 7) M.S., 42 M. Tech. (+ Dual) and 9 B. Tech students. He had completed several international and national sponsored projects and consultancies, both as principle and co-investigators. He has published more than 150 technical papers in international and national journals and conferences. He has reviewed several papers in international journals (IEEE, IET, Elsevier, Springer etc.) and chaired several sessions in conferences. He has received **three (3) best papers and a best design contest award**. Significant and novel technical contributions are: **MSGAN** for Video prediction; **MST-CSS** representation for CBVR tasks; **SUBBAND** face, **3-MET** on **Deep-DA** or **transfer-CNN**, Eigen-domain transformation (**EDT**) and Eigen-scale space (**ESS**) representations for face-based biometry applications; Creation of an Outdoor Surveillance Face Database (support from MCIT, GOI) for biometry; and Manifold based alignment for optimization using Domain Adaptation, for applications in face, object and video categorization tasks.