

DETAILED RESUME

1.0 PERSONAL DETAILS:

NAME Dr. P. NAGABHUSHAN

RESIDENTIAL ADDRESS Poorna Prema, Groud Floor, Malgudi Apartments, Opposite to Nada Brahma, Shri Vasudevacharya Raste (Off JLB Road), Laxmipuram, MYSURU-570 004
Phone +91 821 2515518
Mobile: +91 94480 51551

OFFICIAL ADDRESS **PROFESSOR**, Dept. of Studies in Computer Science, University of Mysore, Manasagangotri, Mysore - 570006, INDIA
Tel:0821-2510789;2419551(Direct), Fax: 2510789
E-mail: pnagabhushan@hotmail.com,
pnagabhushan@compsci.uni-mysore.ac.in

DATE OF BIRTH May 04, 1958

PLACE OF BIRTH Mysore city, INDIA

MARITAL STATUS Married –**WIFE**: Mrs. Lakshmi Bhushan(1962),
DAUGHTER : Miss. Poornima Bhushan(1986)

2.0 EDUCATION DETAILS:

2.1 PROFESSIONAL:

- 1984 - 1988:** **Ph. D** - Doctorate degree under the supervision of *Dr. K. Chidananda Gowda*, Then: Professor & Head, Dept of Computer Science & Engg., Later: Principal, S. J. College of Engineering Mysore - 570006, INDIA. Subsequently: Vice-Chancellor, Kuvempu University, Karnataka, INDIA.
Title: AN EFFICIENT METHOD FOR THE CLASSIFICATION OF REMOTELY SENSED DATA. (INCORPORATING DIMENSIONALITY REDUCTION)
Research Problem: Involved Feature Reduction, Color Composition and Cluster Analysis related to Pattern Recognition, Image Processing and Remote Sensing
- 1981 - 1983:** **M.Tech** - Master of Science-Engineering, Birla Institute of Technology, MESRA, Ranchi - 835215, INDIA.
First position holder all through.
Thesis: COMPUTER AIDED NETWORK ANALYSIS-involved the development of efficacious algorithms for rigorous analysis of interconnected multiport systems using indefinite admittance matrix model.
- 1975 - 1980:** **B.E** Bachelor of Engineering - Electronics & Communication, S. J. College of Engineering, Mysore - 570006, INDIA. **Recognized as top 5% student.**
Project: PREPROCESSOR AIDED STRUCTURE INCORPORATED FORTRAN-a proposal to provide structured programming constructs for FORTRAN-IV using which structured program design could not have been realized.

2.2 ADDITIONAL:

- 1984:** An intensive course on Theoretical Computer Science, IIT, Madras, India.
1988: An intensive course on Digital Image Processing, (applied to Remote Sensing) RRSSC, Govt. of India, Bangalore.
1996: An intensive course on Information Technology.

3.0 PROFESSIONAL EXPERIENCE:

- Nov 1996 onwards:**
- **PROFESSOR**, Dept. of Studies in Computer Science, University of Mysore, Manasagangotri, Mysore-570006, INDIA.
 - **CHIEF NODAL OFFICER:** choice based credit pattern continuous assessment education system, University of Mysore since Jun 2011.
 - Has been responsible in motivating the introduction of Choice based Credit Patterned Continuous assessment education system in the Universities of Gujarath, Lakshmi Bai National University for Physical Education, Gwalior, Madhyapradesh.
 - **June 2011- Nov 2011: DIRECTOR**, Center for Information Science and Technology, University of Mysore.
 - **DIRECTOR** – Planning Monitoring and Evaluation Board, (PMEB), University of Mysore from May 2009 to May 2010.
 - **NOMINATED AS DEAN- SCIENCE & TECHNOLOGY OF UNIVERSITY OF MYSORE** from 1 Jan. 1998 - 15 Jan. 1999.
 - Served as **Chairman** of the Department from 01.01.97 to 01.01.2004 and from 01.01.2006 to 01.01.2008
 - Served as **Chairman**, Board of Studies in Computer Science (for several terms), University of Mysore, Mysore
 - Actively associated with academic (PG programs) and research programs in JSS Research foundation (affiliated to University of Mysore), and in PES Research centre (affiliated to University of Mysore), Mysore, INDIA.
- May 2010-May 2011:** **DIRECTOR**-Bangalore Educational Society for Technology Advancement and Research (BESTAR) and **PRINCIPAL** – Bangalore Technological Institute, Kodathi, Off Sarjapur Road, BANGALORE – 560 035 Karnataka, INDIA.
- July 2004-June 2005:** **DISTINGUISHED PROFESSOR**, Amrita Vishwavidya Peetam, Deemed University, Coimbatore, during sabbatical year. Also served as Chairman of committee for Post-graduate Studies and Research of Amrita University for one term during this period.
- Nov 1995 – Oct 1996:** **VISITING SCIENTIST**, Dept. of Studies in Computer Science, University of Mysore, Manasagangotri, Mysore-570006, INDIA
- Nov 1994 – Oct 1996:** **PROFESSOR**, Dept. of Computer Science & Engg., S. J. College of Engineering, Mysore-570006, INDIA
- Jan 1988 – Nov 1994:** **ASST. PROFESSOR**, Dept. of Computer Science & Engg., S. J. College of Engineering, Mysore-570006, INDIA

- May 1983 – Dec 1987:** *LECTURER*, Dept of Computer Sc. & Engg., S. J. College of Engineering, Mysore-570006, INDIA
- Aug 1981 – 1983:** Delivered regular lectures on request at Birla Inst. of Technology, MESRA, Ranchi-835215
- Sep 1980 – Aug 1981:** *LECTURER (Temporary)*, Dept. of Computer Sc. & Engg., S. J. College of Engineering, Mysore-570006, INDIA

4.0 PROFESSIONAL POSITIONS HELD:

1. **Presently CHIEF NODAL OFFICER:** Choice based Credit Patterned Continuous Assessment Education System, University of Mysore.
2. **Presently UNIVERSITY NODAL CONTACT** - Global Initiative for Academic Networking (GIAN) & **CHAIRMAN**, Academic Reformation Committee.
3. **MENTOR & CHAIRMAN** for Specialized Studies in Design, Creative Arts and Tibetan Studies.
4. Presently serving as **CHAIRMAN**-Flexible CBCS System, University of Mysore and **CHAIRMAN**-PhD regulation, University of Mysore, Board of Studies in Computer Science of University of Mysore, **School Member** of University of Hyderabad, **Technical Advisory Committee Member**, Indian Statistical Institute (ISI), Kolkata.
5. **DIRECTOR**, Center for Information Science and Technology, University of Mysore.
6. **DIRECTOR**-Bangalore Educational Society for Technology Advancement and Research (BESTAR) and **PRINCIPAL**-Bangalore Technological Institute, Kodathi, Off Sarjapur Road, BANGALORE – 560 035 Karnataka, INDIA.
7. **Director** – Planning Monitoring and Evaluation Board, University of Mysore May 2009 to May 2010
8. Chairman, Department of Studies in Computer Science, University of Mysore, 1.1.1997 to 1.1.2004 and from 1.1.2006 to 1.1.2008.
9. **Dean**- Science & Technology, University of Mysore, 1 Jan. 1998 to 15 Jan 1999.
10. **Chairman**- Committee for Post-graduate Studies and Research (CPGSR) of Amrita University, 2004-2005.
11. Member- Senate, University of Mysore.
12. Member- Academic Council, University of Mysore.
13. Member- Academic Council, Amrita University.
14. Member- Faculty of Science & Technology, University of Mysore.
15. Chairman- Board of Studies in Computer Science, Board of Studies in Electronics.
16. Chairman- Board of Examiners.
17. Member in BOS and BOE of University of Mysore and other Universities.
18. Member- Faculty of Science & Technology, Engineering of other Universities.
19. Member- Technical Advisory Committee , Indian Statistical Institute, Kolkata, India
20. Served as Chairman, Vice Chairman, Computer Society of India, Mysore Chapter, and served as Vice Chairman of Kannada Ganaka Parishath, Mysore Chapter.
21. Life Member (928), Indian Society for Technical Education (ISTE).
22. Life Member (8672), Computer Society of India (CSI).
23. Life Member (F 108138-8), Institution of Engineers (IE).
24. Life Member (F 217087), Institute of Electronics and Telecommunication Engineers (IETE)
25. Life Member (L-017), IAPR&AI.

26. Life Member(L-26402), Indian Science Congress Association
27. As a working member of All India Board (AICTE) for Computer science, applications and Information Technology.
28. Professional expert/Subject expert /Accreditor / Expert member in various bodies such as UGC/AICTE/DST/PSC.
29. Staff Council Secretary, SJCE Mysore for 2 years
30. Student Welfare Officer, SJCE Mysore for 2 years
31. Deputy to Director Technical, JSS Mahavidyapeetha, SJCE Campus, Mysore for one year.
32. Participated and participating as an expert in the selection / promotion of scientists/ Engineers, faculty (Lecturers, Readers, and Professors) for various Govt. institutes, research labs, universities and organizations.
33. Chair, Co-chair, Programme Committee member for several International, National Conferences and Workshops.
34. Advisory Chair, Editor for Proceedings of several International and National Conferences.
35. On editorial board of many journals.

5.0 PROFESSIONAL RECOGNITION:

Have been associated as advisory chair, program chair, steering chair of many international / national conferences, workshops and symposiums

1. Have been working as a referee/reviewer for International Journals and International Conferences in the areas of Pattern Recognition, Image Processing, Document Analysis, Algorithms
2. Have been working on Editorial Committee of several Indexed Journals
3. Have presented technical papers, delivered Endowment Lectures /invited lectures, conducted tutorials and chaired technical sessions in several International and National Conferences, symposiums, seminars and workshops
4. Presented and published papers in National/International Journals and Conferences
5. Presented papers in several winter/summer schools and orientation schools
6. Invited to deliver special lectures, offer courses and design courses at other Engineering colleges and universities
7. Has been invited as Visiting Professor by Gurunanak University and by University of Kashmir, have been identified as a mentor for Ph.D. activities at University of Kashmir
8. Assisted Kashmir University, Amrita Vishwa Vidyapeetam (Deemed University) in various academic and research activities
9. Have been involved in designing new PG programs in Computer Science & Technology for University of Mysore and other universities
10. Have the experience of coordinating Govt. of India funded research programs and an international research project
11. Worked and have been working as an active member in curriculum revision committees of PG and UG studies in Computer Science and Engineering & Information Technology
12. Coordinating and coordinated M.Tech/M.S programs, M.Sc (Technology). by research, MCA and Ph.D programs and coordinated Ph.D, M.Tech, MCA and BE programs at S. J. College of Engineering, Mysore

13. Designed and implemented the following programs in University of Mysore
 - a. M.Tech – Computer Science & Technology - Supported by UGC, Govt. of India, India – A cross migration program.
 - b. M.Tech – Computer Cognition Technology - Supported by UGC, Govt. of India, India, under Innovative scheme.
 - c. MS (6 semester scheme) – Integrated Master’s degree in Computer Systems.
 - d. M.Tech(Computer Application) a joint initiative and a cooperative program between academic institutes and a professional institute.

Have been responsible and provided the leadership in instituting Credit based Choice based Continuous assessment for M.S and M.Tech programs. This is conceived for the first time in the University of Mysore

14. Invited by Knowledge Commission Gujarat (KCG) for introducing Credit based Choice based Education in all the Universities of Gujarat.
15. Also instrumented and responsible in inducing Credit based, Choice based, Continuous Assessment in Lakshmi Bai National University for Physical Education, Gwalior, Madhyapradesh.
16. Organized and directed the following:
 - a. Advisory Chair – for the series of International Conference on Cognition and Recognition (ICCR) starting from 2005.
 - b. Advisory Chair – for the series of IEEE International Conference on Signal and Image Processing, (ICSIP) starting from 2006.
 - c. Served as Advisory Chair for many other international and national conferences in the theme area.
 - d. Program Chair – National workshop on frontiers of Pattern Recognition and Image processing, New Horizon College of Engineering, Mar. 2006.
 - e. Chair- Technical session on Symbolic Data Analysis, in International Conference on Pattern Recognition and Machine Intelligence, Dec. 2005.
 - f. Co-chair, International Conference on Advanced Computing and Communications, ADCOM-2005.
 - g. Chair- International Conference on Cognition and Recognition, 2005.
 - h. Chair- National Conference on Document Analysis and Recognition, 2003.
 - i. Chair- National Conference on Document Analysis and Recognition, 2001.
 - j. Delivered a session on Automation of Pitman Shorthand in International workshop on Document Analysis, 2005.
 - k. International Conference in Combinatorics, Statistics, Pattern Recognition and related areas (Dec. 1998) as joint secretary.
 - l. International Conference on Document Analysis and Research (IAPR)-1999 as an organizing committee member
 - m. A Tutorial presentation session on Symbolic Data Analysis in the International workshop held by Leads University (UK) and ISI, Calcutta in Jan 99.
 - n. A Special lecture on the use of Symbolic Data Analysis in Remote Sensing Applications in Center for Space Science and Technology Education in Asia and Pacific (Affiliated to UN).

- o. As general chair of XIX Annual Conference of Indian Society of professional social work (2000).
 - p. Organized several national conferences, tutorials and workshops in the area of Pattern Recognition, Image Processing and symbolic data analysis.
 - q. Organized many short term courses, workshops
 - r. Organized a correspondence cum contact Computer Education Program for practicing Engineers and Scientists on Computational Techniques- comprising of Numerical, Statistical, Simulation & Operations Research techniques
17. Have been an active resource person for the following technical teachers' training programs:
- a. Programming and Programming Methodology (Software Engineering, Analysis and Design of Algorithms).
 - b. Computer Oriented Mathematical Methods.
 - c. Digital Computer Hardware.
18. Have been a resource person for several ISTE summer/ winter schools. I was a major associate in the following schools
- a. Neural Networks at S. J. College of Engg., Mysore.
 - b. Symbolic and Fuzzy approaches for data analysis at S J College of Engg., Mysore.
 - c. Symbolic data analysis and its applications at University of Paris IX, Dauphine, France.
 - d. Artificial Neural Network at SJCE, Mysore.
 - e. Cognition and Recognition applications, at University of Mysore, Mysore.
 - f. Document analysis and recognition, at PESCE, Mandya.
19. An expert member of AICTE commissions and UGC commissions
20. Worked as a founder convener in introducing the ideas of campus wide Network & INTERNET for the campus of University of Mysore.
21. Worked as a founder convener in initiating the idea of establishing a non-formal skill training centre in the University of Mysore called Center for Information Science & Technology (CIST).
22. Associated with Confederation of Indian Industries (CII) (South Center, Mysore) as a member of a working group pertaining to the education in Computer Science & Information Science.

6.0 RESEARCH RECOGNITION:

6.1 RESEARCH:

1. Proposal submitted to UGC under Innovative program to institute M.Tech. Computer Cognition Technology is accepted and is funded.
2. AICTE, India has supported a research project in thrust area on Parallel Algorithms
3. ISRO has supported a research project on Dimensionality Reduction and Data Reduction
4. Indian Council for Medical Research has supported the research project on Computer application to analyze trace element inter-relationships in Serum of normal, alzheimer's and parkinson's disorder: A relevance to diagnostic approach
5. UGC has supported a major research project on Postal automation

6. Successfully completed a DRDO, Govt. of India sponsored project - Classification of Multispectral Data
7. Successfully completed a MHRD, Govt. of India Sponsored Industry -Institution Interaction project -An efficient method for Stock Cutting Problem
8. Worked as a Joint Collaborator in INDO-FRENCH Advanced Research Project - Symbolic Clustering of Satellite Image data which successfully completed in July 1997
9. Several projects under thrust area / R&D are approved by MHRD/AICTE, Govt. of India. The themes of these projects are parallel algorithms for computer vision applications, neural networks for image processing, and speech processing
10. Research proposal submitted for CSIR- Golden Jubilee Young Scientists research award was approved in principle- However it could not get funded due to lack of funds.
11. Our research papers have been cited in the monograph on the SODAS (Symbolic Official Data Analysis Software), very high level European project- being compiled by Prof. Dr. H. H. Bock of Germany and Prof. Dr. Edwin Diday of France.
12. Have been supervising research scholars towards Ph.D.
13. Have been guiding several BE, M.Sc (Engg/Tech), M.Sc, MCA and M.Tech thesis/ project works
14. Host Scientist for an international CV Raman Fellow from Africa.
15. Functioned as interfacing resource person for the installation of video surveillance monitoring system for advanced research and development activities in collaboration with Indian Institute of Science(IISc), Bangalore. The system is donated by the team from IISc, Bangalore.

6.2 RESEARCH CANDIDATES:

No. of Candidates who have been awarded Ph.D.	26
No. of Candidates working towards Ph.D.	07
No. of Candidates who have been awarded M.Sc. Tech (by research)	09
No. of Candidates working towards M.Sc. Tech (by research)	01

6.3 AREAS OF ACADEMIC INTEREST:

1. Pattern Recognition - Image Processing - Remote Sensing - Feature reduction - Cluster Analysis - Multistage classification - Exploiting the inherent parallel computational possibilities to devise parallel algorithms for the above problems, Dimensionality reduction integrated classification, Character recognition by dimensionality reduction, Automation of Pitman's short hand, Computer vision, Object recognition, Image analysis, Image compression, Artificial Intelligence, Symbolic data analysis for Pattern Recognition and Image Processing applications, Fuzzy approaches, Neural Network approaches, Cognition and recognition for path planning, Document Image Analysis, Document Language recognition, Distance measures, Postal automation, Knowledge mining, Time series data, Incremental learning, Image Security.

2. Algorithms:
 - a. Graph theoretic algorithms
 - b. Computational techniques
 - c. Operations Research problems
 - d. Analysis of interconnected multiport systems
 - e. Simulation and Modeling
3. Image Processing and Pattern Recognition in Compressed Images, Compressed Data Analytics

6.4 POST-DOCTORAL RESEARCH ACTIVITIES:

1. Optimal Stock Cutting.
2. Preparation of Color Coded Classification maps.
3. Dimensionality Reduction of Symbolic Data.
4. Symbolic data techniques in the analysis of remotely sensed multispectral images.
5. Improved methods for character recognition, particularly Pitman's short hand.
6. Newer methods for image characterization, analysis and compression.
7. Computer Vision – Path Planning- extension to postal automation.
8. Object Recognition through partial knowledge base- Visual and Appearance based models.
9. Recognition of the text language in a multi-lingual documents.
10. Dictionary and NLP supported Text generation.
11. Symbolic Distance Computations.
12. Pattern recognition methods in the analysis of Neurological disorders.
13. Document Image Analysis.
14. Document Language Recognition
15. Postal automation
16. Symbolic data analysis and Fuzzy data analysis for knowledge mining
17. Wavelets for Knowledge mining
18. Histo-objects- New paradigm in symbolic data analysis.
19. Knowledge mining in generic data bases, in texts, Incremental learning mechanisms
20. Decamouflaging the camouflaged images.
21. Equivalence of document images
22. Confidentiality of Digital images
23. Enhancing the readability of text in document images.
24. Tight segmentation methods for document images.
25. OCR for Persian and Arabic scripts
26. Pattern Recognition in Compressed Images
27. Dynamic Path Planning under Uncertainties, Threats and Obstacles employing Indian Cowrie Board Game Models.
28. Tracking an Object of Interest from Distributed Surveillance videos.

6.5 FOREIGN ACADEMIC ASSIGNMENTS:

1994 - PARIS, FRANCE

Carried out research work in the areas of Pattern Recognition, Remote Sensing and Image Processing applications in INRIA and University of Dauphine, Paris, France for about a semester on Indo-French research assignment.

1995 - TOKYO, JAPAN

Invited as a Visiting Professor at the Dept of Systems Engineering, Tokyo Denki University, Japan for a semester. Supervised the work of two PhD Candidates and delivered lectures on Dimensionality Reduction.

1996 - PARIS, FRANCE

Worked in the University of Dauphine Paris, and INRIA on an advanced research assignment by IFCPAR in the area of Symbolic data analysis for Pattern Recognition, Image Processing and Remote Sensing applications.

1997 - PARIS, FRANCE

Worked as an active member with Dr. K. Chidananda Gowda in taking a team of 10 members from India to University of Dauphine, Paris, France in connection with Indo-French Seminar on Symbolic Data Analysis.

1999 – MICHIGAN, USA

Had been to the Department of Computer Science, Saginaw Valley State University, Michigan as an exchange/consulting Professor. During this period, was invited by the Department of Computer Science & Engineering, Michigan State University, East Lansing, Michigan.

1999 - PARIS, FRANCE

Had been to LISECEREMADE, University of Dauphine, Paris as an Invited Professor.

2008 – KHARTOUM – SUDAN

Had been to the University of Medical Science and Technology for assessing the programs in Computer Science and Technology.

2011- MOSCOW – RUSSIA

Had been to the University of Moscow, Moscow, Russia as a team member of Bilateral Indo-Russia Workshop.

7.0 RESEARCH GUIDANCE

7.1 TITLES OF Ph.D. THESIS COMPLETED UNDER MY SUPERVISION:

1. Some New Methodologies for Symbolic Data Analysis.
2. Image Characterization through New Image Attributes & Approaches.
3. Neural Network and Knowledge based System for Conflict resolution: A new approach (An extensive study with unconstrained handwritten numerals).
4. Coding of Satellite Image Data.
5. On Automation of Text Production from Pitman-Short Hand Notes (Pattern Recognition algorithms for the recognition of simple phonetic words).
6. Classification of Remotely Sensed Data: Some New Approaches.
7. Towards Accurate Recognition of Objects Employing a Partial Knowledge Base: Some New Approaches.
8. Cognition of obstacles and free space for motion planning.
9. Rigorous Pattern Shape Analysis useful for automatic Text generation from Pitman Shorthand Document (Incorporating an investigation on text compression also).
10. Integration of Knowledge base and Natural Language Processing in Automatic Recognition of Pitman Short hand Documents.

11. Some new approaches for Image Pattern Analysis through Dimensionality Reduction.
12. An Algorithmic Model for Exploratory Analysis of Trace Elements in Cognition and Recognition of Neurological Disorders.
13. Intelligent Algorithmic Models for 3D Object Recognition.
14. Decamouflaging through Image Processing and Pattern Recognition techniques
15. Wavelets for knowledge mining in multidimensional generic databases
16. An intelligent integrated automation system for efficient processing of postal mail
17. Data Extraction: An attempt towards Dynamic Variants and Adaptive Recognition.
18. Equivalence amongst document images at multiple levels through hierarchical structural attributes.
19. Enhancing the readability of foreground-text in document images with noisy/complex background.
20. Automatic Segmentation of Persian Handwritten Text Enabling Accurate recognition
21. Incremental Learning: Some Exploratory Studies
22. Multi-Layered 3D Modeling
23. Digital Image Confidentiality: A Novel Perspective
24. Design, Development and Implementation of Efficient and Reliable Wavelet based Watermarking Technique for Colour Images
25. On the Possibility of Processing Document Images in Compressed Domain
26. Producing a Readable Text File from Text Dominant Video Images

7.2 TITLES OF M.SC. TECHNOLOGY (BY RESEARCH) THESIS COMPLETED UNDER MY SUPERVISION:

1. Identification of Occluded Objects useful in Vision Applications.
2. Similarity and Dissimilarity Measures in Symbolic Data Analysis.
3. Software for Pincode Extraction and Validation: A step towards Postal Automation in India.
4. Towards Cataloging of Satellite Images using Neural Networks based Data Mining Techniques.
5. Some Visual Clues based Procedures for Language Identification in Multi Lingual Documents.
6. Document layout extraction (Using Voronoi Diagram technique) for classification of Documents.
7. Recognition of disorders in infants by the cognition of deviations in cry features through symbolic data analysis.
8. An OCR-less approach to establish the equivalence between two Degraded and/or scaled Document Images.
9. An OCR-less approach for Automatic Scoring and Correction of children's hand written dictated text

7.3 TITLES OF ONGOING RESEARCH WORKS UNDER MY SUPERVISION:

PH.D

1. Incremental learning with large number of attributes/features.
2. Context based / Classes of interest based dimensionally reduction
3. Graph-theoretic model for the recognition of handwritten Arabic script
4. Indian Cowrie Board Game Model for Dynamic Path Planning amidst Uncertainties, Obstacles and Threats En-route.
5. Segmentation in Compressed Document Images.

6. Entry – Exit Surveillance.
7. Auto-filling of forms

M.Sc. Technology (By research)

1. Automatic Extraction of Attributes from Bank Cheque Images for Updation of DB of Clearance-Transactions.

7.4 CURRENT RESEARCH STUDIES FOR GUIDING CANDIDATES IN FUTURE:

1. Adaptive dimensionality reduction and incremental mining
2. Analysis of cluttered scene
3. Image inpainting
4. Symbolic data and fuzzy data framework for knowledge mining
5. Text mining – Automatic incremental understanding and comprehension
6. Transcription of text in short Braille to complete text in English and production of the text in audio enabling editing at audio level
7. Depth wise slicing of 3D images

7.5 APPRECIATIONS:

1. FIETE-Fellow of Institution of Electronics and Telecommunication Engineering.
2. FIE-Fellow of Institution of Engineers.
3. Visiting Professor for the year 2009 by ISTE New Delhi.
4. ICCR-08 Outstanding Academician and Researcher- Award in appreciation of life time contribution to the field of Computer Science and Engineering.
5. ICICOT 07 Outstanding Academician.
6. IEEE – ICSIP – 06 Award in appreciation of life time contribution to the field of Signal and Image Processing.
7. Highly Performing Alumina – Mahajana Educational Society's Mahajana Junior College, MYSORE.
8. Sponsored Project by ISRO on Dimensionality Reduction was regarded as the top project of the year.
9. Some of the journal papers were listed as the top papers of the respective years.
10. Lifetime Achievement Award – RTIP2R – 16 – For Outstanding Achievement, Gopal Leadership and Dedicated Service to the field of Image Processing and Pattern Recognition.
11. National Merit Scholar throughout +2, graduate and post-graduate studies.

7.6 RESEARCH PUBLICATIONS:

Total Number of Research **Papers** - **500+** (30% Journals,30% International Conference Proceedings. About 100+ papers are highly acclaimed **DBLP indexed**)

[Citations – **1800**, **H-Index** – **20**, **i10-Index** – **52**, as on **02-05-2017**]

8.0 RESEARCH PUBLICATIONS

1. Analysis of remotely sensed data by mapping to color and planar spaces. 22nd Int. Symp. on Remote Sensing of Environment, ERIM, Michigan (Abidjan) 1988.
2. Compression of multidimensional image data: A new technique. Int. EI Conf., Boston 1988.
3. Color composite imaging of multidimensional data: A new approach. All India Seminar on Remote Sensing and Image Processing, Gwalior 1988.
4. Color representation of multispectral data. 2nd Int. Conf. on color in Information Technology and Visual Display, 1988.
5. A novel graph theoretic clustering algorithm based on the concept of mutually nearest vertices. Pattern recognition letters.
6. Stereographic projection based dimensionality reduction of remotely sensed multidimensional data. Int. Seminar of Image Processing, Singapore 1989.
7. A new technique for image compression and display using graphics projection. Int. EI. Conf., Boston 1989
8. Dimensionality Reduction and Color Composite Imaging of remotely sensed data: A new approach. 7th Thematic Conf. on Remote Sensing for Exploration Geology, ERIM, Calgary, Alberta, Canada 1989.
9. Principle of dimensionality reduction techniques in Image Processing (Modified Stereographic projection technique). Seminar on Camouflage, DRDO labs, Jodhpur 1989.
10. Techniques of Computer Simulation. - UGC Conf. on Modern trends in Mathematics, Coimbatore-1990. * Also chaired a session in the same conference.
11. Elimination of least desirable features and dimensionality reduction for pattern recognition applications. Int. Conf. on Automation, Robotics & Computer Vision, Singapore, Sep. 1990.
12. Computer aided analysis and design of series inverter based on transient behavior.
13. Development of computer oriented algorithm using indefinite matrix. ISTE winter school, 1986.
14. Transient behavior based design and analysis of systems. ISTE winter school, 1986.
15. A Parallel model for the cognition of earth resources using multispectral signatures. Int. Conf. on Computers, Control - COMCONEL 91, Cairo Egypt, Dec. 91.
16. Recognition of Print Numeral using Symbolic data analysis. Int. FCS-93, Paris, France, Sep. 93
17. Edge Enhancement Using Artificial Neural Network. 10th Thematic Conf. ERIM, San Antonio, 1994.
18. A new approach for feature transformation to Euclidean Space useful in the analysis of multispectral data. IOWA Int. Conf. Geoscience and Remote Sensing Symp. IGARSS 94, Pasadena, California
19. Dimensionality reduction of symbolic data. Pattern Recognition Letters, Feb. 1995.
20. High capacity Neural Associative Memory. Int. Conf. on Signals, Data, Systems Organization and Association for the advancement of Modelling and Simulation Techniques in Enterprises (AMSE), France, Dec. 1994.
21. Normalization based dimensionality reduction of symbolic data: A new approach. Int. Conf. on Ordinal & Symbolic Data Analysis, Paris, France, June 20-23, 1995.
22. Wavelet based compression of image sequences. Int. Symp. on Intelligent Robotic Systems, ISIRS 95, Bangalore, India, Nov. 1995
23. Compression of image sequences using adaptive wavelet packets. National Communication Conf. NCC 96, Bombay, India, Feb. 96
24. Modified Agglomerative clustering useful for quantitative analysis of remotely sensed data. Eleventh Thematic Conf. on Applied Geologic Remote Sensing, Las Vegas, Nevada, USA, Feb. 1996.
25. Improved edge detection in multispectral image through Dimensionality Reduction. Eleventh Thematic Conf. on Applied Geologic Remote Sensing, Las Vegas, Nevada, USA, Feb. 1996.
26. Symbolic Clustering of SPOT Satellite Data. IFCS-96, Data Science, Classification and Related methods, V Conf. of Int. Fedn. of Classification Societies, Kobe, Japan, Mar. 96.
27. Modified Divisive Clustering for Analysis of Remotely Sensed Data. IGARSS 96, IEEE, USA, May 1996.
28. A new approach to Handwritten Character Recognition. 20th Workshop of the Austrian Association of Pattern Recognition, Austria, May 1996.
29. Image sequence compression using Adaptive Wavelet Packet. IGARSS'96, IEEE, USA, May 1996
30. Can expert System Simulation techniques support the decision making tasks of pest-management in Sericulture. Current Science, vol. 70, no. 6, Mar. 96.
31. A Framework to estimate natural classes in remotely sensed data. ANZIIS-96, 4th Conf., Adelaide, South Australia, Nov. 1996
32. A new number theory based image coding. ANZIIS-96, 4th Conf., Adelaide, Australia, Nov. 1996.
33. A neural network based expert systems model for conflict resolution. ANZISS-96, 4th Conf., Adelaide, Australia, Nov. 1996
34. A neural network based multiple expert system model for conflict resolution. Proc. of IAPR- Machine Vision Application 96, 1996.

35. Image sequence compression using Adaptive Wavelet Packet. IEEE V Symp. on Intelligent Systems, India, Nov. 1996
36. Identification of occluded objects useful in Vision application. IEEE V Symp. on Intelligent Systems, India, Nov. 1996
37. A new procedure for cluster validation of symbolic objects using Fuzzy logic. IEEE V Symp. on Intelligent Systems, India, Nov. 1996
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