(E. G. Rajan)

Ethirajan Govinda Rajan
Professor of Signal Processing
President, Pentagram Research Centre Pvt. Ltd., India
Director, Avatar MedVision U.S., LLC., NC, USA
Chairman, Science & Technology Development Board,
Helios & Matheson Analytics Inc., NY., USA
and Zone Technologies Inc., Florida, USA
Franklin Member, London Journals Press, United Kingdom
Tel: +91-40-23553986, Mobile: +91-9849164747
E-mail: rajaneg@yahoo.co.in; dr.rajaneg@gmail.com
Web: http://www.pentagramresearch.com

A. IDENTIFYING DATA

1.	Date of Birth:	June 30, 1950
2.	Place of Birth:	Tamil Nadu, India
3.	Nationality:	Indian
4.	Identification marks:	A scar in the left arm pit
4.	Marital Status:	Married (One son and one daughter)
5.	Passport Number:	G9359877

B. ACADEMIC HISTORY

DEGREES AND UNIVERSITIES ATTENDED

Ph.D	Electrical Engineering, (Signal and Image Processing), Indian Institute of Technology, Kanpur, U.P., 1989-90
M.E.	Applied Electronics, Madras University, 1982-83
DMIT	Electronics Engineering, Madras Institute of Technology Chromepet, Madras, 1973-74
B.Sc	Physics Major, Madras University, 1969-70

ACADEMIC AND PROFESSIONAL HONORS

Categorized as the Best Instructor of the department of Electrical Engineering, of the Indian Institute of Technology, Kanpur for the academic years 1990-1991 and 1991-1992.

Category # 1 reports on the Ph.D thesis from the external examiners (i) Prof. A.G. Constantinides, Imperial College of Science, Technology and Medicine, London and (ii) Prof. Claudio Moraga, University of Dortmund, Germany, 1989.

1 in the class with the grade A in the one year German course conducted by the department of Humanities, I.I.T. Kanpur, 1986.

University first in the Industrial Electronics paper during the M.E. program in the Madras University, 1981-1982.

Commendation from Indian Navy for the book written on the Electronic Order of Battle Records of certain Radars, Aviation Research Center, Cabinet Secretariat, Government of India, 1980.

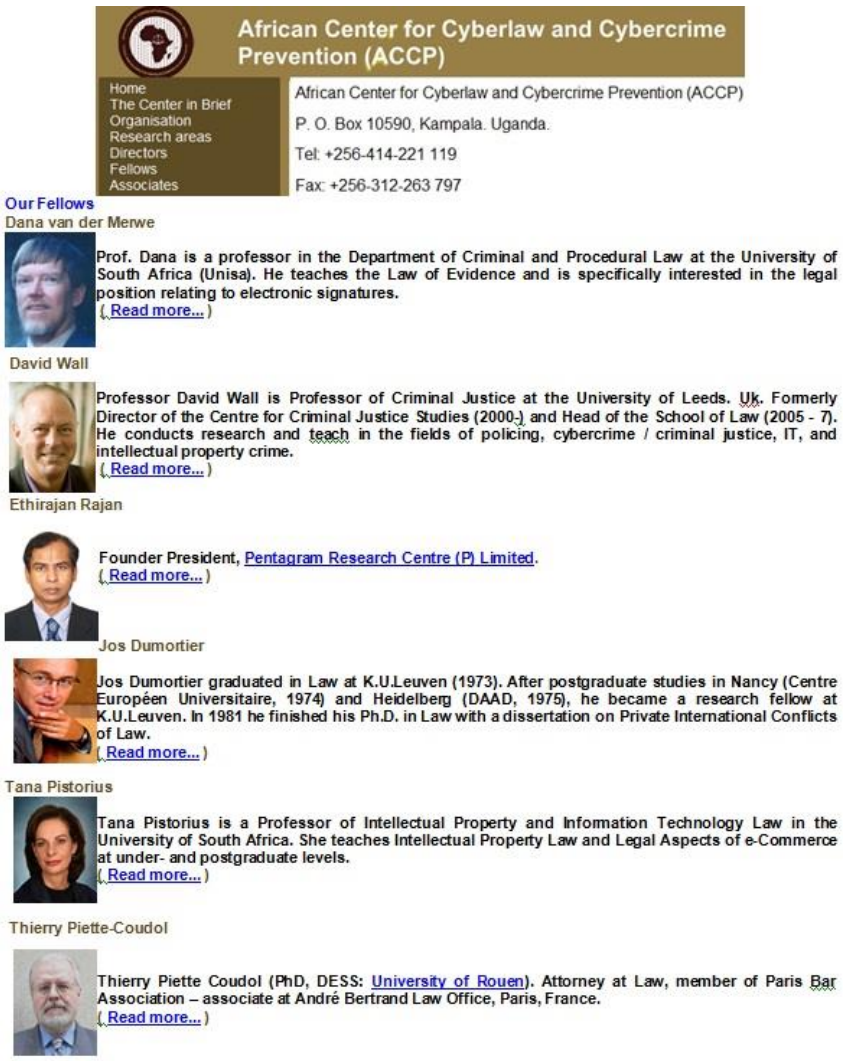
Best project award for the students' project work "Electronic Robot Animal", Directorate of Tech. Education, Guindy, Madras, 1975.

All faculty first in Engineering Drawing and Thermodynamics during the D.M.I.T. programme, Madras Institute of Technology, 1971.

University first in English (Grade: B+) in the Pre-University Examination, Madras University, 1967.

School first in General Science and Moral Science, Sacred Heart High School, Golden Rock, Board of Secondary Education, Madras, 1961.

DISTINGUISHED HONORS AND AWARDS



Distinguished Scientist and Man of the Millennium Award, Who is Who Bibliographical Records, Cambridge, 2000.

Editor, AMSE, Royal Academy of Doctors, Barcelona, Spain

Special Invitee, (RAS) Russian Academy of Sciences, Siberian Branch

Elected Member, International Federation of Systems Research, Johannes Kepler Universität Linz, Austria

Fellow, African Center for Cyberlaw and Cybercrime Prevention (ACCP), Kampala, Uganda (UN sponsored organization)

Who's Who in the world, Marquis Bibliographic Record, USA, 2010

Rashtriya Gaurav Award for the year 2012 by India International Friendship Society, New Delhi.

Veda Vedi Vibhushana Award felicitated by H. H. Swami Ramdev during the second National Conference on Vedic sciences, Arshadhara – 2013 held at the Mythic Society, Bengaluru on 28th December 2013

Bharat Ratna Dr. APJ Abdul Kalam Gold Medal Award instituted by GEPRA, India, during National Unity Conference held at Chennai on October 15, 2015.

Mahatma Gandhi Gold Medal Award instituted by GEPRA, India, during National Unity Conference held at Bangalore October 15, 2016.

C. EMPLOYMENT RECORD

SUMMARY OF EMPLOYMENT RECORD

43 years of industrial, professional, teaching and research experience

1 . **1993 onwards**

President Pentagram Research Centre Private Limited, Hyderabad (1997 -)
Director **Pentagram Labs Inc**, Cupertino, California, USA (January 2015 - 2016)
Director **Avatar MedVision U.S., LLC**., North Carolina, USA (January 2013 -)
Chairman, Science & Technology Development Board, **Helios & Matheson Analytics Inc., NY., USA & Zone Technologies Inc., Florida, USA** (Dec. 2016 -)
Director **Birla Research and Life Sciences**, Mumbai
(Inducted as Director from November 23, 2010 up to April 2013)
Principal and Campus Director
Nizam Academic Campus, Hyderabad (2011-2014)
Principal and Campus Director
Avanthi Institute of Engineering and Technology (March 2010-August 2010)
Director Sagar Institute of Technology, Chevella, Hyderabad (March 2009 – Dec.2009)

Director Academic Planning, JBIET, Hyderabad (July 2008 – December 2008)
Principal JBIET, Hyderabad (July 2008 – December 2008)
Adviser Gokaraju Rangaraju Educational Society, Hyderabad, 2006-2008
Dean Gokaraju Rangaraju Institute of Engineering & Technology-up to 2008
Professor Vasavi College of Engineering, Hyderabad,
Electronics and Communication Engineering (2000-2006)
Head Department of Computer Science and Engineering, and
Department of Information Technology (1997-2000)
Professor Electronics and Communication Engineering (1993-1997)

2 . **1990 to 1993**

Visiting Professor (Research Associate), Department of Electrical Engineering, Indian Institute of Technology, Kanpur, U. P.

3 . **1977 to 1986**

Electronic Warfare Officer / Signal Analyst, Aviation Research Centre, Cabinet Secretariat, Directorate General of Security, Government of India.

4 . **1974 to 1976**

Engineer (T) / Assistant Lecturer, Directorate of Technical Education, College of Engineering, Guindy, Madras, Tamil Nadu.

D. UG / PG PROJECTS AND RESEARCH GUIDANCE

SUMMARY OF PROJECT WORK SUPERVISED

Ph.D	Number of theses completed:	**50**
	Number of theses in progress:	**15**
	Number of PhD Viva conducted:	**18**
	Number of people registered now:	**10**
M.S/ME/M.Tech	Number of theses completed:	**60**
B.E/B.Tech	Number of reports completed:	**40**

1. **PhD Research Scholars (Partial List)**

E. Nagabhooshanam (MGIT, Hyderabad)
M. Ekambaram Naidu (Principal TRR Engg. College, Hyderabad,)
Mrs. Jyothi Patil (PDA College of Engineering, Gulbarga)
B. Rajasekhara Reddy (Vasavi College of Engineering, Hyderabad)
Yousuf Mulge (Rural College of Engineering, Bhalki, Karnataka)
Manas Pradhan (ICFAI University, Hyderabad)
Ch. Raja (MG Institute of Technology, Gandipet, Hyderabad)
Mrs. Shabana Naaz (Nizam Instt.of Computer Applications, Hyderabad)
S. Veeranna (Principal Aurora Engineering College, Hyderabad)
S. Srinivasa Rao (Aurora Engineering College, Hyderabad)
Ajay Shankar Singh (Professor, JBREC, Hyderabad)
Towheed Sultana (Principal, JBREC, Hyderabad)
P. Manoj Kumar (Professor (JBREC, Hyderabd)
J. Ashok (Principal, Guru Nanak Engineering College, Hyderabad)

R. Sivarajan (Lead Engineer, General Electric, Hyderabad)
N. Narasimha Rao (General Manager, BEL, Hyderabad)
Ahmed Sajjad Khan (Anjuman College of Engineering, Nagpur)
Wing Commander V. Vijaya Saradhi (Vice President, PRC, Hyderabad)
G. Ramesh Chandra (VNR VJIET, Hyderabad)
T.V.V. Satyanarayana (CBIT, Hyderabad)
D. Venkat Reddy (MGIT, Hyderabad)
T. D. Bhatt (MGIT, Hyderabad)
Md. Zuber (HI-Point College of Engineering, Hyd.)
Mrs. Shanthi (Malla Reddy Engineering College, Hyderabad)
Mrs. Jasmin (Malla Reddy Engineering College, Hyderabad)
Fernadez Dimlo (Narasimha Reddy Engineering College, Hyderabad)
V. Subrahmanyam Talam (Research Engineer, PRC, Hyderabad)
Mrs. Leela Priya Inturu (Research Engineer, PRC, Hyderabad)
Marasimha Rao Yamarthi (Research Engineer, PRC, Hyderabad)
Mallaiah (Research Engineer, PRC, Hyderabad)
Bigikumar R (Vice President, PRC, Hyderabad)
Ajikumar (Research Engineer, PRC, Hyderabad)
Naveed Farhana (Research Engineer, PRC, Hyderabad)
Ashley Dhas (CSI Institute of Technology, Nagarkovil, Tamil Nadu)
Kasi Viswanatham (Research Engineer, PRC, Hyderabad)
Mrs. Nuzhat Sultana (MJIT, Hyderabad)
D. Anand (Tata Institute of Fundamental Research, Hyderabad)
Doneti Ravinder (Junior Scientist, PRC, Hyderabad)
Mrs. Varsha Suhas Phadke (D. Y. Patil Institute of Technology, Mumbai)
Pravin Bhalchandra Annadate (D.Y.Patil Institute of Technology,Mumbai)
Mrs. Shribala Nagul (Bhoj Reddy College of Engineering, Hyderabad)
M. Pavan Kumar (JNTU, Hyderabad)
P. Srinivasa Rao (CVR College of Engineering, Hyderabad)
M. Venugopal (JNT University, Hyderabad)
Mrs. S. Aparna Reddy (JNT University, Hyderabad)
Md. Sherfuddin Khan (Nagpur University, Maharashtra)
Mrs. Aruna Suhasini Devi (Gitam University, Visakhapatnam)
A.V. Nagarjuna Reddy (Gitam University, Visakhapatnam)
A. Arun Kumar (Mysore University, Karnataka)
S. Sree Hari Raju (Mysore University, Karnataka)
P. Venkateswarlu (Mysore University, Karnataka)
Madhavi Pingili (Mysore University, Karnataka)
Kethepalli Mallikarjuna (JNT University, Kakinada)
S. Naveen Kumar (CBIT, Hyderabad)
Mrs. Afshan Kaleem (JNT University, Kakinada)
Syed Azar Ali (MJ College of Engineering, Hyderabad)
Ch. Sudha Sree (Acharya Nagarjuna University, Guntur)

2. **Ph.D Viva Voce Examinations conducted so far**

Fractal 3D-MRI Studies**,** Ph.D thesis by Mr. Bhanu Praksh, Department of Electrical Engineering, **Indian Institute of Science**, Bangalore, 2002

3D Coding of MR Images and Estimation of Henmodynamic Response Function from fMRI Data, Ph.D thesis by Mr. R. Srikanth, Department of Electrical Engineering, **Indian Institute of Science**, Bangalore, 2004

Digital Signal Processing of Cohlear Implants, Ph.D thesis by Mrs. Shanti Prabha, Professor Department of Electronics and Communication Engineering, **JNT University, Kakinada**, 2005

A Study On The Analytic And Algebraic Aspects Of Structured Algorithms, Ph.D thesis by Mr. N. Sairam, Professor, School of Computing, Shanmugha Arts, Science, Technology and Research Academy (**SASTRA- Deemed University**) Thanjavur, Tamil Nadu, 2006

Certain Investigations On The Performance And Hardware Implementation Of Scheduling Algorithms For Packet Switches In High Speed Networks, Ph.D thesis by Mrs. G. Shanthi, Professor, Department of Electronics and Communication Engineering, **PSG College of Technology**, Coimbatore, Tamil Nadu, 2006.

PhD thesis by Shri. Rajiv Sharma, Research Associate, Design Laboratory, Department of Ocean Engineering Naval Architecture, **Indian Institute of Technology, Kharagpur**, West Bengal

PhD thesis by S. Nirmala, Research Scholar, Department of Information and Communication Engineering, **Anna University, Chennai**

PhD thesis by V. Ramani Bai, Research Scholar, Department of Computer Science and Engineering, **Anna University, Coimbatore**

PhD thesis by Umesh P., Research Scholar, Department of Computational Biology and Bioinformatics, **University of Kerala**

PhD thesis by Janaki Sathya D., Research Scholar, Department of Electrical & Electronics Engineering, **Karpagam University**, Coimbatore Tamil Nadu.

A Study On FT-AOMDV Protocol Using Trust Based Bayesian Statistical Model And RSSI With Fuzzy Logic, PhD thesis by Geetha S, **Anna University, Chennai**.

Design And Implementation Of Congestion Control Schemes For High Speed Netwroks Using Adaptive Queuing Delay, PhD thesis by Malarvizhi S, **Mother Theresa Women's University,** Kodaikanal

Hybrid Fuzzy Based Intrusion Detection System To Prevent DDOS Attacks Using Authentication Technique In Wireless Local Area Networks, PhD thesis by Moorthy M, **Anna University**, **Chennai.**

Optimality Of Some Constrained Facility Location Problems Using Artificial Neural Networks, PhD thesis by G. M. Nasira, **Mother Theresa Women's University,** Kodaikanal

Performance Evaluation of Neural Network and Support Vector Machine Models in Local Short term Wind Speed Prediction, PhD Thesis by K. Sreelakshmi, **Avinashilingam University for Women,** Coimbatore

Content Based Video Analysis and Retrieval, PhD thesis by Mr. Satish Kumar Varma, **Swami Ramanand Teerth Marathwada University**, NANDED – 431 606, Maharashtra State

Some Investigations On Hexapod Robot Movement Control Using Intelligent Controllers, PhD thesis by Senthil Kumar S, **Anna University, Chennai**

Comparison And Analysis Of Face Changes By Using Image Processing Techniques, PhD thesis by Mr. Ramesh Hegde, Department of Computer Science and Applications, **Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya, Kanchipuram 631 561**

Analysis Of SHA-3 Final Round Candidate Algorithms And Design Of Variant To Skein Hash Family, PhD thesis by Rajeev Sobti, **Lovely Professional University**, Punjab.

3. **M.S. / M.E. / M.Tech theses work supervised – Partial list**

Object Identification and Tracking in a Multiple Target Environment, M.E. thesis submitted to Osmania University by Mr. K. Jayasankar 1994.

Skeletonization of Graphic Images using Cellular Logic Array Processing techniques, MCA thesis submitted to Osmania University by Mukaramuddin 1995.

Generalised Rapid Transformation and its use in Data Encryption, M.Tech thesis submitted to Regional Engineering College, Warangal by N. Srinivasa Rao, 1996.

Representation and Processing of Digital Images on Hexagonal Grid, M.Tech thesis submitted to Department of Electronics, Government of India, by R. Subhani 1997

Cellular Automata Modeling of Unidirectional Fluid Flow, M.E. thesis submitted to Jawaharlal Nehru Technological University, Hyderabad by G. S. S. Prasada Rao 1997.

Modeling and Simulation of Solidification and Aggregation using Lattice Gas Automata, M.E. thesis submitted to Jawaharlal Nehru Technological University, Hyderabad by V.S. Ravi Prasad 1997.

Machine Vision Aided Component Sorting in a Robot Based Industry using Generalised Rapid Transform, M.E. thesis submitted to Jawaharlal Nehru Technological University, by S. Venugopal, 1997.

Modeling of Obstacle Avoidance in the framework of Cellular Logic Array Processing, M.E. thesis submitted to Jawaharlal Nehru Technological University, by V. V. Sai Reddy, 1997.

Generalised Rapid Transform and its Applications to Pattern Recognition and Image Processing, M.E. thesis submitted to Gulbarga University by Moyeed Sultana, 1998.

Constructive Genetic Algorithms in the Framework of Markov's Associative Calculus, M.Tech thesis submitted to Osmania University by Mrs. Nuzhat Sultana, 1998

A Constructive Logical Approach to Intelligent Control of Autonomous Systems, M.E. thesis submitted to Osmania University by Ms. Mohsina Afroze, 1998.

FLEXINET – An Intelligent Networking System, M.Tech thesis submitted to Visveswaraiah Technological University, Karnataka, by Mrs. Parveen Tabassum, 1999

Cellular Automata Realization of Digital Filters, M.Tech thesis submitted to Visveswaraiah Technological University, Karnataka, by Mrs. Shabana Naaz, 1999

Spatial and Spectral Domain approach to watermarking of digital images submitted to Visveswaraiah Technological University, Karnataka, by Mr. Fakaruddin Chisty, 2000.

Information Coding Techniques for Error Detection and Correction, M.Tech thesis submitted to Jawaharlal Nehru Technological University, by G. Krishna Reddy, 2000

Rajan Transform and Its Applications, M.Tech thesis submitted to Jawaharlal Nehru Technological University, by Veera Narayana Reddy, ALFA College of Engineering, Nandyal, 2001

Collision Avoidance Systems in a Combat Space, M.Tech thesis submitted to Jawaharlal Nehru Technological University, by Mr. Narender Reddy, Associate Professor, Dept. of Computer Science, Vardhaman College of Engineering, Hyderabad, 2005

4. B.S. Projects supervised – Partial list

Cellular Logic Techniques for Character Recognition
Digital Filters and Filter Automata
Morphological Image Processing in Hexagonal Digital Grid
Lindenmayer Systems and their use in parallel Processing of Signals
Precision Tracking and Control of Autonomous Homing Systems
Symbolic Processing of Signals
Neural Automata Based Object Recognition
Two Dimensional Digital Filters- Analysis and Design
Speech Digitization using Adaptive Delta Modulation
GIS- an Integration of GRASS 4.1 (U.S.Army Product) with CLAP
Signal Processing using Rewriting Cyclic Normal Automata
Character Recognition using Generalised Rapid Transform
Study of Algebraic Properties of Rajan Transform
BRAHMASTRA - Target Seeking / Target Avoiding System Model.
VC++ Based Software for Collision Avoidance Systems.
Sub Band Coding of Speech signals in Windows Environment.
Watermarking of Digital Images using Rajan Transform

Neighborhood Processing of Digital Images
Cellular Logic Based Collision Avoidance System
Flank Wear Measurement using Machine Vision Techniques
Vander Pol Oscillators – Stability Analysis

---

5. Academic courses taught for more than once (UG/PG Level)

UG Level

Electronic Devices and Circuits
Microprocessors and applications
Linear Integrated Circuits and Applications
Linear Systems Theory
Digital Signal Processing
Control Systems Theory
Image Processing and Pattern Recognition
Probability, Random Variables and Stochastic Processes
Statistical Communication Theory
Radar and Navigational Aids
Speech Processing
Discrete Mathematical Structures
Theory of Computing
Symbolic Logic

Graduate Level

Artificial Intelligence and Neural Networks
Pattern Recognition
Graph Theory
Detection and Estimation Theory
Advanced Data Structures

Research Level

Symbolic Processing of Signals and Images
Theory and Applications of Cellular Automata
Constructive Mathematical Logic
Nano Technology – Molecular Electronics
Spectral Domain Characterization of Signals

6. Leading Positions Held in Government and Private Institutions

Selection Committee Member, DRDO, Defense Ministry, Government of India
R&D Coordinator in various academic institutions, India
Department Chair (ECE / CSE)
Advisor & Dean, Engineering in Gokaraju Gangaraju Academic Society, India
Principal (Various Indian Institutions)
Director Academic Planning, JB Group of Institutions
Executive Pro Vice Chancellor Candidate (Staffordshire University, UK, 2011)
Independent Director, in certain Ltd companies, India
Director in certain Indian and US companies
Chairman, Technology Development Board, in a US company

E. PROJECTS AND CONSULTANCY

Research / Company Projects

1. **High-Throughput Cellular Logic Array Processing Structures for Image Understanding**, Advanced Center for Automation Research, Vasavi College of Engineering, a research and development project sponsored by the All India Council for Technical Education, Govt. of India. Project Cost: Rs. 5,00,000/-. (Project completed.)
2. **Computer Vision Laboratory**, Advanced Center for Automation Research, Vasavi College of Engineering, a project sponsored by All India Council for Technical Education, Government of India. Project Cost: Rs. 6,00,000/-. (Project completed.)
3. **Automated Currency Checking,** Pentagram Research, Pattern recognition Division, Hyderabad, Funded by Tyche Peripheral Systems, Hyderabad. Project Cost: Rs. 20,00,000
4. **Finger Printing Classification**, in association with Micro Technologies, Mumbai, Project cost: Rs 15,00,000
5. **Prospecting Gold in Chattisgarh**, in association with ENAM Securities and other Mining Companies, Mumbai, Project cost: Rs 7 Crores
6. **Logical Image Processing System (LIPS),** Venture Funding for US$ 1.0 Million (Proposed)
7. **Logical Pattern Generation System (LPGS),** Venture Funding for US$ 1.0 Million (Proposed)
8. **Logical Currency Checking System (LCCS),** Venture Funding for US$ 0.5 Million (Proposed)
9. **PATHOSOFT (A Computer Aided Tool for Clinical Laboratories)** Venture Funding for US$ 0.25 Million (Proposed)
10. **Underwater Surveillance and Support System (USSS),** A Classified Project (Proposed)

Proposed Commercial Projects

Ten commercially viable projects have been proposed by me to Pentagram Research Centre Pvt. Limited, India and associated companies in USA with Proof of Concept. Brief details of these projects are given below.

Project # 1

MedVision3D/4D

Medvision3D/4D is a powerful 3D software that can be used to visualize, process and analyses biomedical data from MR, PET, SPECT and other imaging modalities. Medvision 3D/4D's multifaceted and sophisticated platform delivers effective visualization and analysis tools and modules such as NeuroVision, CardioVision, OrthoVision, Electronic Surgery etc. Extraction of volumetric and superficial features of certain parts of human body for the quantitative analysis of the anatomical structures in 3D images is the major utility of this software. Powerful state-of-the-art algorithms used to develop the software ensures speed,

precision and robustness. Wide range of macros and modules would be provided for area specific applications. It would consist of 230 routines and it would provide facility for user driven macro generation. In short, this would be an ideal diagnostic and prognostic tool for radiologists, surgeons and all other health care professionals. In this context, Pentagram Research Centre Private Limited, Hyderabad, India and associated companies in USA are planning for expansion, requiring capital funding to meet the proposed **commercial plan**. The expansion plan basically drives in six segments such as (i) Sale of Licensed Software to Corporate Hospitals, (ii) Sale of Licensed Software to Individual Professionals, (iii) Serving General Public and Medical Professionals via **Cloud,** (iv) Establishment of Training Institutes, (v) Establishment of Radiology Research and Diagnostic Centers and (vi) KPO & BPO Services.

Project # 2

GeoVision3D

Major objectives of this project:

1. To develop new methodologies for data acquisition, processing, interpretation
2. To integrate multiple technologies focusing VSP (Vertical Seismic Profiling) methodology and interpretation that guide discovery of new oil reserves, oil field development and management for maximum economic oil recovery.
3. To make use of VSP (Vertical Seismic Profiling) methodology for prospecting minefield development and management for maximum economic recovery of various minerals and gems.

Sub-objectives of this project:

a. To device methodologies for collecting data from underground of the earth crust. Data acquisition sensors like Synthetic Aperture Radar (SAR) / Ground Penetrating Radar (GPR) and Microwave pulse transmitters could be used to achieve this. Other seismographic techniques could also be used alternatively or in association with SAR/ GPR.

b. Multiple Sensor Fusion is the next part. Data collected from various sensors could be integrated as a data set from which quite a lot of information about the subsurface elements could be interpreted.

c. Fast and reliable algorithms for extracting information from the data set is the major R&D component involved in this project.

d. To develop an Artificial Intelligence (AI) based Expert System Software Package as an integrated component with a given GeoData Processing requirement. Miners, Civil Engineers and Archaeologists would find this package very useful.

e. To develop a state-of-the-art technology to use the above tools for detecting oil, minerals and gems reserve in a particular area from which genuine and reliable data set has been collected.

f. As a part of this project a few people would be trained in the state-of–the-art operational methodology of Oil Exploration, Archaeological Excavation and Mining.

In this context, Pentagram Research Centre Private Limited, Hyderabad, India and associated companies in USA are planning for expansion, requiring capital funding to meet the proposed **commercial plan**. The expansion plan basically drives in four segments such as (i) Sale of Prospecting Autonomous Mobile Robots (AMRs) with Licensed Software to Mining Companies, (ii) Sale of Licensed Software to Individual Geomatic Professionals, (iii) Serving Geomatic Professionals via **Cloud, (iv)** Establishment of Geomatics Training Institutes.

Project # 3

Molecular Electronic Devices Fabrication Laboratory

This is a flagship project of the company with in-built competence and of national importance. The core objective of this project is to do research and fabricate commercially viable molecular electronic devices and molecular processors. Investment is required to venture into such a kind of business.

Project # 4

Solar Cooling System

This is an Indo-German project proposed by the company with technical assistance from certain pioneers from Germany. This deals with the technology of using solar heat for cooling purposes. Comfort cooling and freezing up to 4 degrees centigrade have been achieved so far. The working model is in the Applied Mechanics department of the University Of Gelsenkirchen, Germany. There is no cost for this project suggested by the company. Investment is required to venture into such a kind of sure shot business.

Project # 5

International Institute of Advanced Research and Development.

IIARD is deemed to be one of the world's leading centers for advanced research and intellectual inquest. The Institute would encourage and support research in all branches of sciences, humanities, art, engineering, law and business. It would provide opportunities, required facilities and freedom to research scholars, fellows and faculty members to undertake research and development that will make significant contributions in any of the broad range of fields in the sciences, humanities, art, engineering, law and business studied at the Institute. It is the major mandate of the Institute to convert all research contributions into useful products and services for the wellbeing of the society. Investment is sought to venture into such a kind of sure shot academic enterprise.

Project # 6

Radar Information System for Electronic Support Measures

The purpose of this project is to develop a state-of-the-art paradigm and practical techniques for carrying out operations pertaining to '***Electronic Support Measures*** **(ESM)'**, identify various problems faced by the ESM operators in real time situations and explore the possibilities of evolving solutions to these problems in the form of alternative techniques and methodologies. The term '***Electronic Support Measures***' refers to (i) intercepting enemy radar signals by passive receivers like tuners and wide band receivers, (ii) recording the received signals on a magnetic tape or a suitable electronic medium in the form of pre detected intermediate frequency down translated waveforms and post detected

pulse stretched waveforms, (iii) analyzing the recorded waveforms for estimating various radar system and signal parameters like Pulse Repetition Frequency (PRF) or Pulse Repetition Interval (PRI), Pulse Width (PW), intra pulse modulation types and details, stagger ratio, jitter, antenna scan type, scan time and type of radiation pattern, (iv) estimating important details like Mean Time Before Failure (MTBF), radar on time, radar off time and (v) preparing Electronic Order of Battle (EOB) records about the enemy country. EOB means estimated details about the offensive and defensive capabilities of a country. ESM operations are generally carried out by organizing special mission flights along the border for radar signal intercepts. Daily intercepts are also made from strategic locations. This project aims at the development of a state-of-the-art software support system for Electronic Warfare Officers working in '**Electronic Intelligence**' and '**Electronic Order of Battle**' and with the formulation of upgraded versions of such techniques. Investment is required to venture into such a sure shot private party owned security project.

Project # 7

Transaction Automation System for Banking Security

Transaction Automation System for Banking Security is an ATM system integrated with a built-in AI based software. This could be made available as a ready-made product for international marketing. This system would be an important component in secured banking and ATM transaction since it provides the highest order of reliability using encrypted biometric techniques of fingerprinting, speaker verification and IRIS recognition. The algorithms used in developing various routines are due to an intensive research carried out in various areas related to biometrics and data encryption. Investment is required to venture into this sure shot banking security project.

Project # 8

Advanced Cancer Research Centre

This project is aimed at establishing a privately owned modern oncological research centre with multiples of nodal centres throughout the country interconnected via satellites. This is the need of the hour project whose prime objective is to reduce mortalities due to late detection of cancer in patients and if possible eradicate the dreaded disease from earth. Investment is required to venture into such a kind of an important private party owned health care project.

Project # 9

Optical and Thermal Image Video Surveillance for Homeland Security

This Military Version TIPS 1.0 has already been developed using Visual C++ tools. Algorithms have been generated in the framework of Cellular Logic Array Processing. The software has been tested for its precision, speed and robustness. 2D thermal streaming video could be processed in real time for extracting various spatial and spectral domain features. TIPS 1.0 consists of a number of routines and it provides facility for user driven macro generation. All extracted spatial features of a 2D video image could be quantified provided it is scaled. This software works reliably even on thermal images obtained in pitch dark using an IR camera or any other night vision camera. This could be customized for any

hardware. Investment is required to venture into such a kind of sure shot private party owned security project.

Project # 10

Genome Research Institute

Converting DNA sequences into digital signals opens up the possibility of applying signal-processing methods for analysis of genomic data. This kind of analysis reveals features of chromosome that would be difficult to grasp using standard statistical methods. Genomic information is coded in the form of letters A, T, C and G. The indicator sequences of a genomic sequence form the basis for genomic signal processing. Research in this direction has already shown the possibility of developing strategies related to Codon Space Analysis and Stem Cell Research so that a new possibility of adopting 'gene therapy' instead of 'drug therapy' would turn out to be the futuristic medical practice. Investment is required to venture into such a kind of sure shot private party owned high tech project.

Efforts are being made to get financial support for executing all these ten projects. Detailed project reports and standard operating procedures have already been prepared for this purpose.

F. FIELDS OF INTEREST

Communication Engineering, Signal and Image Processing, Computer Vision, Pattern Recognition and Analysis, Modeling and Simulation, Systemics, Cybernetics and Informatics, Symbolic Computation, Automata Theory, Agent Technology, Molecular and Quantum Computing, Molecular Electronic Devices, Bioinformatics, Biometrics and Cryptography

G. PROFESSIONAL ACTIVITIES

Fellow, Institution of Engineers, India, Professional Member, ACM, U.S.A.; Life Member, Indian Society of Technical Education (ISTE), India; Founder President, Pentagram Research Center Private Limited, Hyderabad, India; Faculty Advisor, Indian Institute of Information Technology, Hyderabad, India; Hon. Director, International School of Information Technology, DSRF Research Foundation, Hyderabad, India; Editorial Board Member, AMSE, Barcelona, Spain; Adviser, LS Mechatronics, Hyderabad, India; Member, Board of Governors, Institute of Professional Education & Research, Bhopal, Madhya Pradesh, India., Chief Editor, International Journal of Systemics, Cybernetics and Informatics, India; Guest Editor, International Journal of Computer Applications, England, Member, International Federation of Systems Research, Austria, Reviewer, IET and IEEE; Franklin Member, London Journals Press, UK

H. SUPERVISION IN VARIOUS DEVELOPMENTAL ACTIVITIES

PARADIGMS AND SOFTWARE DEVELOPED	
Languages Known:	C, C++, VC++, Visual Studio.Net
Applications for:	Image Processing, Pattern Recognition
Concepts developed:	Symbolic Computing

Cellular Logic Array Processing (CLAP) version 1.0 IBM PC compatible software package for image processing, pattern recognition and array manipulation, developed in Turbo C.

Cellular Logic Array Processing (CLAP) version 2.0 IBM PC compatible software package for image processing, pattern recognition and array processing, developed for Transputer T800 system in Logical Systems C.

CLAPTEX, a commercially viable software package for generating patterns, developed in Visual C++.

CLAPIP, a commercially viable image processing software package developed in Visual C++. (Component Oriented Approach) CLAPPR, a software package for pattern recognition, developed in Visual C++ meant for automation purposes. (Component Oriented Approach)

CLAPGIS, a package for use in Geographic Information Systems and Remote Sensing Applications, developed in Visual C++. (Component Oriented Approach)

CLAPSA, a software package meant for space applications, especially for target seeking and collision avoidance purposes. This was developed in Visual C++. (Component Oriented Approach)

LIPS Version 3.0 (Logical Image Processing System), a software package meant for image processing applications. This was developed in C#.

LPGS Version 3.0 (Logical Pattern Generating System), a software package meant for pattern design applications. This was developed in C#.

LCCS Version 1.0 (Logical Currency Checking Processing System), a software package meant for checking the security thread in currency notes. This was developed in C#.

LCCS Version 2.0 (Logical Currency Checking Processing System), a software package meant for checking the genuineness of currency notes as per specifications of RBI. This was developed in C#.

MEDIMAGE Version 1.0 (Medical Imaging System), a software package meant for processing medical imageries. This was developed in C#.

PATHOSOFT Version 1.0 (Pathological Software System), an integrated software package with clinical microscope meant for morphological analysis of human body fluids. This was developed in C#.

SCS Version 1.0 (Solar Cooling System), an Indo-German project of a novel state-of-the-art technology for manufacturing solar cooling systems in India for freezing and comfort cooling. This project has been undertaken with the help of Professors Dieter Lukoschus and Braun and Dipl. Eng. Wolfgang of the University of Gelsenkirchen, Germany.

L3DIPS Version 1.0 (Logical 3D Image Processing System), a software package meant for MRI applications. This was developed in C#.NET

MedVision3D/4D (Medical 3D Image Processing System), a software package meant for MRI and fMRI applications. This was developed in C#.NET

GeoVision3D (Geological 3D Image Processing System), a software package meant for subsurface imaging applications. This was developed in C#.NET

LIPS Version 4.0 (Logical Image Processing System), a software package meant for image processing applications. This has been developed in C#.NET

LVPS Version 4.0 (Logical Video Processing System), a software package meant for image processing applications. This has been developed in C#.NET

CRA Version 1.0 (Crime Records Analytics), a software package meant for public and government use. This self-sponsored project is proposed for a significant use in home land security.

I. INVITED PRESENTATIONS AND OPEN INVITATIONS

IIT Kanpur; IIT Madras; National Remote Sensing Agency, Hyderabad; RCI / DRDL, Hyderabad; University of Hyderabad; University of Maryland @ College Park; Florida State University, Tallahassee; Georgia Institute of Technology, Atlanta; Lincoln Laboratory, MIT, Cambridge; Pennsylvania State University @ State College; LSU, Baton Rouge, University of Southwestern Louisiana, La Fayette., University of Southern California., Russian Academy of Science, Syberia, Kepler University, Austria, University of Aegean, Greece, Sardar Vallabh Bhai Patel National Police Academy, Hyderabad, University of Petroleum and Energy Studies, Dehradun, Lovely Professional University, Punjab, Tapar University, Patiala, Chandigarh University, Punjab

J. CONFERENCE ACTIVITIES

Judge for the session on Hardware for Computer Vision during the International Conference SURGE'94 held at Annamalai University, Chidambaram, Tamil Nadu

Judge for the session on Information Technology, during the National Technical Students' Seminar organized by the ISTE at Chaitanya Bharathi Institute of Technology, Hyderabad in 1996.

Chairman for a session on Circulatory Systems during the International Conference INCONBME'96 organized by the Biomedical Society of India at Coimbatore Institute of Technology, December 1996.

Program Committee member of SCI'97 World Conference on Systemics, Cybernetics and Informatics at Simon Bolivar University, Venezuela, 1997.

Chairman for a session on Medical Instrumentation during the National Conference on Advances in Biomedical Engineering, organized by Biomedical Society of India and Model College of Engineering, Cochin, 1997.

Key Note Address on Rajan Transform and its use in Image Processing and Pattern Recognition and Analysis during the National Conference on Advances in Biomedical Engineering, organized by Biomedical Society of India and Model College of Engineering, Cochin, 1997.

Chairman for a session on Medical Instrumentation and Measurements during the National Conference on Biomedical Engineering, organized by the Biomedical Society of India and Manipal Institute of Technology, 1998

Judge for the Graduate Students' M. A. Pai Memorial Paper Competition during the National Conference on Biomedical Engineering, organized by the Biomedical Society of India and Manipal Institute of Technology, 1998

Chairman for a session on Sensors and Control during the 14th International Conference on CAD/CAM, Robotics & Factories of the Future, organized by the ISPE, U.S.A. and the P.S.G. College of Technology, Coimbatore 1998.

Chairman for the session on Medical Imaging during the International Conference on BIOVISION2002, Indian Institute of Science, Bangalore, India, Dec. 2001

Chairman for the tutorial session on Biometrics during the International Conference on BIOVISION2002, Indian Institute of Science, Bangalore, India, December 2001.

Chairman for the International Conference on Systemics, Cybernetics and Informatics (ICSCI2004), Hyderabad, February 2004.

Chairman for the International Conference on Systemics, Cybernetics and Informatics (ICSCI2005), Hyderabad, January 2005.

Chairman for the International Conference on Systemics, Cybernetics and Informatics (ICSCI2006), Hyderabad, January 2006.

Program Committee Member, INFOCOMMUNICATIONAL AND COMPUTING TECHNOLOGIES AND SYSTEMS, (Ulan-Ude – lake Baikal), Organized by Institute for System Dynamics and Control Theory SB Russian Academy of Sciences and Ulan-Ude Branch, Buryat State University, East-Siberian State Technological University, Irkutsk State University, Analytical Network and Informational Society, Russia, July 1 – 4, 2006

Chairman for the International Conference on Systemics, Cybernetics and Informatics (ICSCI2007), Hyderabad, January 2007

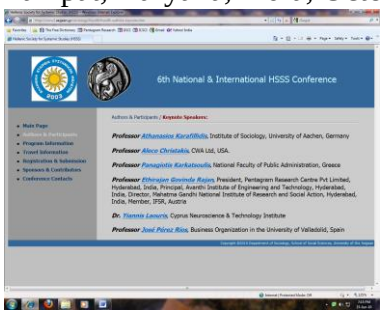
Chairman for the International Conference on Systemics, Cybernetics and Informatics (ICSCI2008), Hyderabad, January 2008

Chairman for the International Conference on Systemics, Cybernetics and Informatics (ICSCI2009), Hyderabad, January 2009

Chairman for the International Conference on Systemics, Cybernetics and Informatics (ICSCI2010), Hyderabad, January 2010

Advisory Committee Member, National Seminar on Recent Trends in Image Processing and Pattern Recognition, February 15-16, 2010, Karnatak Arts, Science and Commerce College, Bidar. Karnataka

National Advisory Committee Members, IEEE 4th International Conference on Advanced Computing and Communication Technologies, ICACCT 2010, APIIT, Panipat, Haryana, India, October 30, 2010.



Key Note Address on "Systemic Way of Life in Vedic Society" presented during the 6th International HSSS conference held at Mitilini, Greece from June 23-26, 2010 which was organized by Hellenic Society for Systemic Studies and the University of Aegean, Greece.

Chairman for the International Conference on Systemics, Cybernetics and Informatics (ICSCI2011), Hyderabad, January 2011
Chairman for the International Conference on Systemics, Cybernetics and Informatics (ICSCI2012), Hyderabad, February 2012
Chairman for the International Conference on Systemics, Cybernetics and Informatics (ICSCI2014), Hyderabad, February 2014
Chairman for the special session on Discrete Rajan Transform in Big Data Analytics during the International Conference on Advances in Big Data Analytics (ABDA'14: July 21-24, 2014, Las Vegas, USA)

K. PUBLICATIONS

BOOKS

1. A classified book on **Electronic Order of Battle Records of Military Radars**, published by the Cabinet Secretariat, Government of India, 1982.
2. Two books on **Computers and Information Technology**, Book Syndicate Publications, Hyderabad, July 2002.
3. A book on **Foundations of Information Technology,** Book Syndicate Publications, Hyderabad, July 2000.
4. A book on **Symbolic Computing – Signal and Image Processing,** Anshan Publications, Kent, United Kingdom, July 2003
5. A book on **Advanced Computing,** Book Syndicate Publications, Hyderabad, 2008
6. A book on **Symbolic Computing – Signal and Image Processing, Ed. 2,** Pentagram Research Publications, Hyderabad, 2012

RESEARCH JOURNALS – Partial list

1. Cellular Logic Array Processing Techniques for High-throughput Image Processing Systems, SADHANA, Invited paper, Special Issue on Computer Vision, Volume 18, Part 2, June 1993, pp 279-300, Indian Academy of Sciences, Bangalore.
2. On the Notion of Constructive Sets and Function Spaces, Journal of Philosophical Logic, MIT Press, Cambridge 1991
3. Cellular Logic Array Processing Part I and II, Computer Graphics, Pergamon Press, 1991 and 1992
4. A Deductive Theory of Space and Time, AMSE, Royal Academy of Doctors, Barcelona, Spain 1999.
5. On the Notion of Rajan Transform and its Applications, International Journal of Universal Computer Science, Austria, 2005
6. Nonnumerical Representation And Processing Of Signals And Images - Lecture Series-1, International Journal of Systemics, Cybernetics and Informatics, pp 80-90, India, January 2006

7. Modeling Of Collision Avoidance Processes, International Journal of Systemics, Cybernetics and Informatics, pp 55-62, India, April 2006
8. Normal Algorithms - Lecture Series-2, International Journal of Systemics, Cybernetics and Informatics, pp 95-101, India, April 2006
9. Signal Processing Considerations of Deoxyuridine 5'-triphosphate nucleotidohydrolase (duTPase) Gene, International Journal of Systemics, Cybernetics and Informatics, pp 60-65, India, July 2006
10. Normal Algorithms For Implementing Nonnumerical Signal Processing Operations - Lecture Series-3, International Journal of Systemics, Cybernetics and Informatics, pp 72-75, India, July 2006
11. Realization of Certain Normal Algorithmic Signal Processing Operations Lecture Series-4, International Journal of Systemics, Cybernetics and Informatics, pp 79-93, India, October 2006
12. Study Of Normal Algorithmic Signal Processing Systems In Terms Of Formal Languages Generated By a Grammar - Lecture Series – 5, International Journal of Systemics, Cybernetics and Informatics, pp 84-91, India, January 2007
13. Electronic Counter Support Measures (ECSM) – An Introduction, International Journal of Systemics, Cybernetics and Informatics, pp 60-64, India, April 2007
14. Special Automata for Normal Algorithms and their Transcriptions – Lecture Series-6, International Journal of Systemics, Cybernetics and Informatics, pp 79-88, India, April 2007
15. The Logic Of Constructive Signal Processing - Lecture Series-7, International Journal of Systemics, Cybernetics and Informatics, pp 83-88, India, July 2007
16. Homomorphisms In The Theory Of Constructive Signal Processing - Lecture Series-8, International Journal of Systemics, Cybernetics and Informatics, pp 86-91, India, October, 2007
17. Two Dimensional Image Understanding Using Rajan Transform, Journal of Visualization, Japan, 2007
18. Web GIS an application of agriculture information system at district level, Journal of Geomatics, October 2007
19. Design of Frequency Coded Waveforms for Target Detection, Institution of Engineering and Technology, United Kingdom, 2007
20. A Deductive Theory of Space, Time and Consciousness, International Journal of Systemics, Cybernetics and Informatics, pp 11-15, India, January 2008
21. A Constructive Reformulation Of Extended Topological Filters Lecture Series–9, International Journal of Systemics, Cybernetics and Informatics, pp 73-84, India, January 2008
22. Quantifiable Measures Of Constructive Extended Filters In Terms Of Normal Algorithmic Operators Lecture Series–10), International Journal of Systemics, Cybernetics and Informatics, pp 87-91, India, April 2008

23. Cellular Automata And Their Realizations (Lecture Series–11), International Journal of Systemics, Cybernetics and Informatics, pp 86-95, India, July 2008
24. Normal Algorithmic Realization Of Cellular Automata (Lecture Series–12), International Journal of Systemics, Cybernetics and Informatics, pp 75-81, India, October 2008
25. Human Activity Tracking using RFID Tags, IJCSNS International Journal of Computer Science and Network Security, VOL.9 No.1 , pp 387-394, January 2009
26. Pattern Generation, (Lecture Series – 13), International Journal of Systemics, Cybernetics and Informatics, pp 71-77, India, January 2009
27 Cellular Logic Image Processing, (Lecture Series – 14), International Journal of Systemics, Cybernetics and Informatics, pp 72-78, India, April 2009
28. Logical Image Processing System PART – I (Lecture Series – 15), International Journal of Systemics, Cybernetics and Informatics, pp 50-57, India, July 2009
29. Logical Image Processing System PART – II Of Section 15, (Lecture Series – 16), International Journal of Systemics, Cybernetics and Informatics, pp 43-53, India, October 2009
30. Robust And Secured WEP Protocol For Wireless Adhoc Network, ACEEE Letters, International Journal of Recent Trends in Engineering, Vol 2, No. 2, pp 248-252, November 2009
31. Investigation of Rainfall – Runoff modeling of the Ashti catchment by SCS Curve Number using Remote Sensing and GIS, Journal of Geomatics, Vol 3 No.1 April 2009
32. Systemic Way of Life in Vedic Society, International Journal of Systemics, Cybernetics and Informatics, pp 11-20, India, January 2010
33. Logical Image Processing System PART – III of Section 15 (Lecture Series – 17), International Journal of Systemics, Cybernetics and Informatics, pp 52-60, India, January 2010
34. Efficient Algorithm for Hierarchical online Mining of Association Rules, International Journal of Systemics, Cybernetics and Informatics, Jan.2010.
35. Theory Of Constructive Image Processing - On The Notion Of A Geometric Filter And Its Relevance In The Neighbourhood Processing Of Digital Images (Lecture Series – 18), International Journal of Systemics, Cybernetics and Informatics, pp 63-71, India, April 2010
36. Beyond Information Retrieval: A Survey, International Journal (JATIT) (Journal of Theoretical and Applied Information Technology) in vol:15 / No:1, May 2010
37. Principal Component Analysis Based Image Recognition, International Journal of Computer Science And Information Technologies (IJCSIT) vol.1, issue 2, May 2010.

38. Writer Identification And Recognition Using Radial Basis Function, International Journal of Computer Science And Information Technologies (IJCSIT) vol.1, issue 2, May 2010
39. Off-Line Hand Written Character recognition using Radial Basis Function, International Journal of Computer Science And Network Security (IJCSNS), May 2010
40. Adaptive Resonance Theory Based Sedimentary basins Identification, International Journal of Reviews in Computing (IJRIC) vol. 3, June 2010.
41. A System Engineering Approach to Molecular Electronics, International Journal of Computer Applications (0975 – 8887), Volume 3 – No.8, June 2010
42. Research Areas Related To Symbolic Processing Of Signals And Images (Lecture Series – 19), International Journal of Systemics, Cybernetics and Informatics, pp 62-70, India, July 2010
43. Orbital Structure Analysis in Molecular Electronics, International Journal of Computer Applications (0975 – 8887) Volume 4– No.8, August 2010
44. Multi Spectral Image Enhancement in Satellite Imagery, ACS-International Journal on Computational Intelligence, Vol-1, Issue-1 pp 13-20, August 2010
45. Application Areas Related To Symbolic Processing Of Signals And Images (Lecture Series – 20), International Journal of Systemics, Cybernetics and Informatics, pp 62-72, India, October 2010
46. Enhancement of Exon Regions Recognition in Gene Sequences Using a Radix-4 Multi-valued Logic with DSP Approach, Global Journal of Computer Science and Technology Vol. 10 Issue 11 (Ver. 1.0), pp 13-22, October 2010
47. Off-Line Hand Written Character recognition using Radial Basis Function, International Journal of Advanced Networking and Applications (IJANA) volume 2, issue 4, pp 792-795 (2011).
48. Brahma Sutra: A Deductive Logical Exposition of Brahman Section 1 of Chapter 1 (Lecture Series – 1) International Journal of Systemics, Cybernetics and Informatics pp 11-16, India, January 2011
49. A Constructive Logical Approach To The Study Of Collision Avoidance Problems Pertaining To Autonomous Mobile Systems Meant For Space Exploration (Part – 1), International Journal of Systemics, Cybernetics and Informatics, pp 46-59, India, January 2011
50. Design of High-Resolution Radar Waveforms for Multi-radar and Dense Target Environments, IET Radar, Sonar & Navigation, March 2011
51. Vector Quantization Approach for Speaker Recognition using MFCC and Inverted MFCC, International Journal of Computer Applications (0975 – 8887) Volume 17– No.1, pp 1-7, March 2011
52. Brahma Sutra: A Deductive Logical Exposition of Brahman Section 1 of Chapter 1 (Lecture Series – 2) International Journal of Systemics, Cybernetics and Informatics pp 11-16, India, April 2011

53. A Constructive Logical Approach To The Study Of Collision Avoidance Problems Pertaining To Autonomous Mobile Systems Meant For Space Exploration (Part – 2), International Journal of Systemics, Cybernetics and Informatics, pp 52-58, India, April 2011
54. ASAF ALOHA Protocol for Dense RFID, Systems, Wireless Personal Communication, Springer Science+Business Media, LLC. June 2011
55. Improving the Performance of Volume Rendering For Medical Images, International Journal of Advances in Soft Computing Technology, Volume: 1, Issue: 2, July-December 2011, ISSN: 2229-3515
56. Brahma Sutra: A Deductive Logical Exposition of Brahman Section 1 of Chapter 1 (Lecture Series – 3) International Journal of Systemics, Cybernetics and Informatics pp 11-16, India, July 2011
57. Brahma Sutra: A Deductive Logical Exposition of Brahman Section 1 of Chapter 1 (Lecture Series – 4) International Journal of Systemics, Cybernetics and Informatics pp 11-16, India, October 2011
58. Brahma Sutra: A Deductive Logical Exposition of Brahman Section 2 of Chapter 1 (Lecture Series – 5) International Journal of Systemics, Cybernetics and Informatics pp 11-16, India, January 2012
59. Brahma Sutra: A Deductive Logical Exposition of Brahman Section 2 of Chapter 1 (Lecture Series – 6) International Journal of Systemics, Cybernetics and Informatics pp 11-16, India, April 2012
60. Brahma Sutra: A Deductive Logical Exposition of Brahman Section 2 of Chapter 1 (Lecture Series – 7) International Journal of Systemics, Cybernetics and Informatics pp 11-16, India, July 2012
61. Brahma Sutra: A Deductive Logical Exposition of Brahman Section 2 of Chapter 1 (Lecture Series – 8) International Journal of Systemics, Cybernetics and Informatics pp 11-16, India, October 2012
62. Algorithms For Generating Convex Polyhedrons Over Three Dimensional Rectangular Grid, Signal & Image Processing: An International Journal (SIPIJ) Vol.3, No.2, April 2012, DOI: 10.5121/sipij.2012.3214
63. Attack Robustness and Security Enhancement with Improved Wired Equivalent Protocol, ACEEE Int. J. on Network Security, Vol. 03, No. 02, April 2012, DOI: 01.IJNS.03.02.3
64. A Novel Model for Chaotic Behaviour of Random user Surfing Pattern and Prediction in World Wide Web by using Logistic Map, European Journal of Scientific Research, ISSN 1450-216X Vol.79 No.2 (2012), pp.279-289 © EuroJournals Publishing, Inc. 2012
65. Fuzzy based Rate Control Algorithm for End-to-End Congestion Control in Internet, European Journal of Scientific Research ISSN 1450-216X Vol.81 No.1 (2012), pp.10-25 © EuroJournals Publishing, Inc. 2012
66. Improved kernel-based IRIS recognition system in the framework of support vector machine and hidden Markov model, IET Image Process., 2012, Vol. 6, Iss. 6, pp. 661–667 661, doi: 10.1049/iet-ipr.2011.0249

67. Delay based End to End Internet Congestion Control using Natural Logic, International Journal of Advanced Trends in Computer Science and Engineering, Volume 1, No.2, May – June 2012, ISSN No. 2278 -3091
68. Load Aware Congestion Detection Technique in Internet, IJCSI International Journal of Computer Science Issues, Vol. 9, Issue 4, No 1, July 2012, ISSN (Online): 1694-0814
69. Spatio-Temporal Modeling Of Snow Flake Crystals Using Packard's Cellular Automata, IJRET: International Journal of Research in Engineering and Technology ISSN: 2319-1163, Volume: 01 Issue: 04 | Dec-2012
70. IRIS Recognition based on Non Linear Dimensionality Reduction of IRIS Code with KPCA and SVM based Classification, International Journal of Computer Applications (0975 – 8887) Volume 44– No13, April 2012
71. Analysis Of Various Urban Growth Models Based On Cellular Automata, [IJESAT] International Journal Of Engineering Science & Advanced Technology Vol.-2, Issue-3, 453–460, May-Jun 2012, ISSN: 2250–3676
72. Algebra Of Three Dimensional Geometric Filters And Its Relevance In 3-D Image Processing, The International Journal of Multimedia & Its Applications (IJMA) Vol.4, No.1, February 2012, DOI: 10.5121/ijma. 2012. 4106
73. Applications Of Rewriting Cyclic Normal Automata In Adaptive Signal Processing, International Journal of Computer Science Engineering and Information Technology Research (IJCSEITR), ISSN 2249-6831, Vol. 3, Issue 1, Mar 2013, 249-256
74. Performance Analysis of Gray Scale and Color Iris with Multidomain Feature Normalization and Dimensionality Reduction, Global Journal of Computer Science and Technology, USA, Graphics & Vision, Volume 13 Issue 1 Version 1.0 Year 2013, Online ISSN: 0975-4172 & Print ISSN: 0975-4350
75. Normalized Vector Codes for Object Recognition using Artificial Neural Networks in the Framework of Picture Description Languages, Global Journal of Computer Science and Technology Neural & Artificial Intelligence, USA, Volume 13 Issue 2 Version 1.0 Year 2013, Online ISSN: 0975-4172 & Print ISSN: 0975-4350
76. Application Of Different Filters In Mel Frequency Cepstral Coefficients Feature Extraction And Fuzzy Vector Quantization Approach In Speaker Recognition, International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181, Vol. 2 Issue 6, June – 2013
77. Pextral Coding In The Framework Of Cellular Automaton And Its Application To Visual Cryptography, International Journal of Engineering Research and Applications (IJERA) ISSN: 2248-9622, Vol. 3, Issue 1, January -February 2013, pp.1850-1853
78. Cryptography Techniques for Image Security and Authentication using Cellular Automata Algorithms, International Journal of Advanced

Computer Research (ISSN (print): 2249-7277 ISSN (online): 2277-7970) Volume-3 Number-3 Issue-11 September-2013

79. Design And Implementation Of Dyadic Shift And Graphical Inverse Of String Sequences Using Rewriting Cyclic Normal Automaton, International Journal of Computer Science Engineering and Information Technology Research (IJCSEITR), ISSN (P): 2249-6831; ISSN(E): 2249-7943, Vol. 4, Issue 4, Aug 2014, 121-126
80. A survey on applications of Automata Theory, International Journal of Advances in Computer, Electrical and Electronics Engineering, ISSN 2248- 9584, volume 3, issue 1, page no 436-442, 2014
81. Realization of Arithmetic Operations on Signal Sequences Using Normal Algorithms and Rewriting Cyclic Normal Automaton" International Journal of Computer Science Engineering and Information Technology Research journal (IJCSEITR), 139 ISSN 2249-6831(P), 2249-7943(E), Volume 4, Issue 4, pp 127-134, 2014.
82. Three Dimensional Image Processing in Hexagonal Prism Lattice of Z^3 Grid, Advances in Image and Video Processing, Society for Science and Engineering, United Kingdom, Volume 5, Issue 3, ISSN 2054-7412, June 2017, DOI: 10.14738/aivp.53.3241
83. Surface Detection in 3D Images Visualized in Hexagonal Lattice of Z^3 Grid Using Morphological Filters, Journal of Adv. Research in Dynamical & Control Systems, ISSN1943-023X, 05-Special Issue, July 2017

TECHNICAL REPORTS

1. Image Processing using Normal Algorithmic Cellular Automata, TR/IP-4-91, Department of Electrical Engineering, Indian Institute of Technology, Kanpur, 1991.
2. Pattern Directed Image Processing, TR/IP-5-91, Department of Electrical Engineering, Indian Institute of Technology, Kanpur, 1991

INTERNATIONAL CONFERENCES - Partial list

1. High-throughput cellular logic array processing of remotely sensed imageries, International Conference on Remote Sensing & GIS, JNTU, Hyderabad, 1992.
2. High-throughput cellular logic array processing of satellite data for geophysical surveying, invited paper, no. A.1-S.1.08, World Space Congress, Washington, DC, September 1992.
3. Fast algorithm for detecting volumetric and superficial features in 3-D images, International Conference on Biomedical Engineering, Osmania University, Hyderabad, 1994.
4. Object recognition and tracking in a multiple target environment 1994 IEEE International Conference on Systems, Man and Cybernetics, San Antonio, Texas, 1994, pp 2390-2395.
5. Fast algorithm for skeletonizing 3-D images, 8th International Conference on Biomedical Engineering, 1994, Singapore, pp 151-153

6. A genetic algorithmic fixing of attack points in a moving target, 1995 IEEE International Conference on Systems, Man and Cybernetics, Vancouver, B.C., Canada, 1995, pp 217-212.
7. Genetic algorithms in the framework of Markov's constructive mathematical logic, 1995 IEEE International Conference on Systems, Man and Cybernetics, Vancouver, B.C., Canada, 1995, pp 223-228.
8. Neural automata based object recognition, 1995 IEEE International Conference on Systems, Man and Cybernetics, Vancouver, B.C., Canada, 1995, pp 1882-1887.
9. The notion of geometric filters and their use in computer vision, 1995 IEEE International Conference on Systems, Man and Cybernetics, Vancouver, B.C., Canada, 1995, pp 4250-4255.
10. Cellular logic array processing, invited paper, World Congress for nonlinear analysts, organized by the International Federation of Nonlinear Analysts, Florida Institute of Technology, Athens, Greece, 1996.
11. On the notion of a geometric filter and its relevance in the neighborhood processing of digital images in hexagonal grids, 4th International Conference on Control, Automation, Robotics and Vision, Westim Stamford, Singapore 1996.
12. Medical imaging in the framework of cellular logic array processing 15th International Conference organized by the Biomedical Society of India, Coimbatore Institute of Technology, 1996.
13. Use of Generalized Transformation in recognizing patterns due to defects in the weld, invited paper, 8th International Conference on the Joining of Materials (JOM-8) by JOM Institute, Denmark and American Welding Society, Helsingor, Denmark, 1997.
14. Markov's normal algorithms and their generalizations, World Conference on Systemics, Cybernetics and Informatics, Caracas, Venezuela, 1997.
15. Symbol manipulating techniques using Markov's normal algorithms, World Conference on Systemics, Cybernetics and Informatics, Caracas, Venezuela, 1997.
16. Nonnumerical signal processing using Markov's normal algorithms, World Conference on Systemics, Cybernetics and Informatics, Caracas, Venezuela, 1997.
17. An elementary formal system for representing constructive systems, World Conference on Systemics, Cybernetics and Informatics, Caracas, Venezuela, 1997.
18. Special automata for normal algorithms and their transcriptions, World Conference on Systemics, Cybernetics and Informatics, Caracas, Venezuela, 1997.
19. On the notion of generalized rapid transformation, World Conference on Systemics, Cybernetics and Informatics, Caracas, Venezuela, 1997.
20. A generalized rapid transformation based expert system for character understanding, World Conference on Systemics, Cybernetics and Informatics, Caracas, Venezuela, 1997.

21. Cellular Logic Array Processing of laser scanned data of metal surfaces, 14th International Conference on CAD/CAM, Robotics & Factories of the Future, P.S.G. College of Technology, Coimbatore, Tamil Nadu, 1998.
22. Instantaneous Path Fixing of Autonomous Mobile Robots, IFAMNS 2000, International Conference on Intelligent Flexible Autonomous Manufacturing Systems, Coimbatore Institute of Technology, Coimbatore January 2000.
23. On the Notion of Rajan Transform and its Applications to Pattern Recognition, GSPx and International Signal Processing Conference, Dallas, U.S.A. March 31 – April 3, 2003
24. On-line Monitoring of Flank wear in Factory Automation, GSPx and International Signal Processing Conference, Dallas, U.S.A. March 31 – April 3, 2003
25. Theory of Markov's Normal Algorithms, 2012 International Conference on Computing Sciences, 2012 IEEE DOI 10.1109/ICCS.2012.72
26. Symbol Manipulating Techniques, 2012 International Conference on Computing Sciences, 2012 IEEE DOI 10.1109/ICCS.2012.69
27. Normal Algorithmic Signal Processing, 2012 International Conference on Computing Sciences, 2012 IEEE DOI 10.1109/ICCS.2012.49
28. SPL(A) - An Elementary Formal System for Signal Processing, 2012 International Conference on Computing Sciences, 2012 IEEE DOI 10.1109/ICCS.2012.67
29. End Justified Post Turing Rewriting Systems and M-Grammar, 2012 International Conference on Computing Sciences, 2012 IEEE DOI 10.1109/ICCS.2012.33
30. Rewriting Cyclic Normal Automata And Their Applications, 2012 International Conference on Computing Sciences, 2012 IEEE DOI 10.1109/ICCS.2012.63
31. Constructive Sets and Extended Topological Filters, 2012 International Conference on Computing Sciences, 2012 IEEE DOI 10.1109/ICCS.2012.21
32. Cellular Automata And Their Realizations, 2012 International Conference on Computing Sciences, 2012 IEEE DOI 10.1109/ICCS.2012.19
33. Normal Algorithmic Implementation of Cellular Automata, 2012 International Conference on Computing Sciences, 2012 IEEE DOI 10.1109/ICCS.2012.48
34. Design of Biconical Antenna for Wireless Sensor Network Application, International Conference on Computer & Communication Technologies 2K14 March 28-29, 2014, Hyderabad, INDIA
35. Sparsification of Voice Data Using Discrete Rajan Transform and its Applications in Speaker Recognition, 2014 IEEE International Conference on Systems, Man, and Cybernetics, San Diego, California**,** October 5-8, 2014.

36. Surface Detection in 3D Images Using Cellular Logic Array Processing, 2014 IEEE International Conference on Systems, Man, and Cybernetics, San Diego, California**,** October 5-8, 2014.
37. Skin Carcinoma Data Analysis Using Morphological Filters, NGCT-2016 International Conference, October 14-16, 2016, University of Petroleum and Energy Studies, Dehradun, India
38. Localization and Quantification of Ductal Carcinoma in the Calcified Regions of Gamma Corrected Mammographic Images, NGCT-2016 International Conference, October 14-16, 2016, University of Petroleum and Energy Studies, Dehradun, India
39. Monotone Coloring of 3D MR Image Slices and Extraction of their Superficial and Volumetric Features, NGCT-2016 International Conference, October 14-16, 2016, University of Petroleum and Energy Studies, Dehradun, India
40. Spectral Domain Characterization of Genome Sequences, NGCT-2016 International Conference, October 14-16, 2016, University of Petroleum and Energy Studies, Dehradun, India

NATIONAL CONFERENCES – Partial list

1. **Modeling and Simulation using Cellular Automata,** National Conference, organized by the IEEE local chapter, IIT Kanpur and Dayalbagh Institute of Technology, Agra, 1991.
2. **On the notion of geometric filters,** National Conference organized by the Institution of Engineers, India and Annamalai University, SURGE'94, 1994.
3. **Pextral coding of images,** National Conference organized by the Institution of Engineers, India & Annamalai University, SURGE'94, 1994.
4. **MEDIMAGE - a PC based medical image understanding system,** National Conference on Biomedical Engineering, organized by the Biomedical Society of India, at Model College of Engineering, Cochin, 1997.
5. **Cellular automata modeling of unidirectional fluid flow,** 11th conference of ISME (Indian Society of Mechanical Engineers) Indian Institute of Technology, Delhi, 1999.
6. **Thinning Lattice Gas Automaton model for solidification process,** 11th conference of ISME (Indian Society of Mechanical Engineers) Indian Institute of Technology, Delhi, 1999.

L. ADMINISTRATIVE AND ORGANIZATIONAL ACTIVITIES

ACADEMIC ADMINISTRATION

1. Governing Council Member, Paavai Group of Institutions, Tamil Nadu
2. Director, Nizam Integrated Campus, Hyderabad
3. Director and Principal, Avanthi group of Institutions, Hyderabad
2. Principal, Sagar Institute of Technology, Chevella
3. Director / Principal, JB Group of Institutions, Hyderabad

4. Adviser, Gokaraju Rangaraju Educational Society, Hyderabad
5. Professor and Dean, School of Computing, Gokaraju Rangaraju Institute of Engineering and Technology, Hyderabad
6. Professor and Head, Department of Computer Science and Engineering, Vasavi College of Engineering, Hyderabad

CORPORATE ADMINISTRATION

1. Chairman, Pentagram Group of Companies, India and USA
2. Former Director, Birla Research and Life Sciences, Mumbai
3. President, Pentagram Research Centre (P) Limited, Hyderabad, A.P.
4. Director, Avatar MedVision U.S., LLC, NC, USA
5. Former Director, SemiTech Solutions, Australia
6. President, Dr. E. G. Rajan Research Foundation, Tamil Nadu
7. President, Pentagram Research Foundation, Hyderabad, Andhra Pradesh
8. President, Pentagram Power Solutions (P) Limited, Mumbai
9. President, Pentagram Mining Technologies (P) Limited, Mumbai
10. President, Pentagram Research Publications, Hyderabad, A. P.
11. President, Pentagram Oil Exploration (P) Limited, Mumbai

ORGANIZATIONAL ACTIVITIES

1. Chair, International Conference on Systemics, Cybernetics and Informatics, (ICSCI-2000), at IIIT, Hyderabad
2. Chair, International Conference on Systemics, Cybernetics and Informatics, (ICSCI-2004), at Dr. MCR HRD Institute, Hyderabad
3. Chair, International Conference on Systemics, Cybernetics and Informatics, (ICSCI-2005), at Taramati Baradari Complex, Hyderabad
4. Chair, International Conference on Systemics, Cybernetics and Informatics, (ICSCI-2006), at Taramati Baradari Complex, Hyderabad
5. Chair, International Conference on Systemics, Cybernetics and Informatics, (ICSCI), 2007, at Dr. MCR HRD Institute, Hyderabad
6. Chair, International Conference on Systemics, Cybernetics and Informatics, (ICSCI-2008), at Taramati Baradari Complex, Hyderabad
7. Chair, International Conference on Systemics, Cybernetics and Informatics, (ICSCI-2009)
8. Chair, International Conference on Systemics, Cybernetics and Informatics, (ICSCI-2010), Dr. MCR HRD Institute Govt. of AP, India
9. Chair, International Conference on Systemics, Cybernetics and Informatics, (ICSCI-2011)
10. Chair, International Conference on Systemics, Cybernetics and Informatics, (ICSCI-2012)
11. Chair, International Conference ICETT-2012, organized by Basileos Mathews II College of Engineering, Kollam, Kerala
12. Chair, International Conference on Systemics, Cybernetics and Informatics, (ICSCI-2014)

M. PEOPLE ASSOCIATED WITH ACADEMIC AND R&D ACTIVITIES

1. **Brian O'Leary,** Former NASA scientist-astronaut, **U.S.A,** Former special consultant for the U.S. House Subcommittee on Energy and the Environment, Former physics faculty member at Princeton University, Co-founder of the International Association for New Science and the Institute of New Energy, Founder of the Center for Peace, Sustainability, the Arts and New Science, **Equador**
2. **Claudio Moraga,** European Centre of Soft Computing, 33600 Mieres, Asturias, **Spain,** Dept. of Computer Science, University of Dortmund, 44221 Dortmund, **Germany.** Patron, Pentagram Research Centre, Hyderabad, **India**
3. **Danny Ng Siew L'Leong,** Director of many companies in **Malaysia**
4. **Dirk van Dalen**, Historical aspects of Logic and Philosophy of Mathematics, Department of Philosophy, Utrecht University, Heidelberglaan 8, P.O. Box 80126, 3508 TC Utrecht, The Netherlands
5. **Edmund Storms,** Former Scientist, Los Alamos National Laboratory, 2140 Paseo Ponderosa, Santa Fe, NM 87501, **USA**
6. **Gary S. Metcalf,** President Elect, The International Society for the Systems Sciences, **USA,** Vice-president, The International Federation for Systems Research, Vienna, **Austria**
7. **Gerhard Chroust,** University Professor, Systems Engineering and Automation, Kepler University, Linz, **Austria,** Secretary / Treasurer, The International Federation for Systems Research, IFSR, Vienna, **Austria**
8. **Klaus Dieter Lukoschus,** Professor, University of Applied Sciences, Gelsenkirchen, **Germany,**
9. **Mahadeva Srinivasan,** Former Associate Director, Physics Group, Bhabha Atomic Research Centre, Department of Atomic Energy, Government of **India**
10. **Matjaz Mulej,** Professor, Faculty of Economics and Business, University of Maribor, Razlagova 14, SI-62000, **Slovenia,** President, The International Federation for Systems Research, Vienna, **Austria**
11. **Meredith Miller,** Co-Founder of the Center for Peace, Sustainability, the Arts and New Science, **Equador**
12. **Michael McKubre,** Director, Energy Research Center, SRI International, California, **USA**
13. **Richard Stallman,** Chairman, Free Software Foundation, **USA**
14. **Paramahamsa Tewari,** Former Executive Director, Department of Atomic Energy, Government of **India**
15. **Stephen Moo Kim,** Chairman & CEO, Semitech Innovations Pty Ltd., **Australia**
16. **Stephen Wolfram,** University of Illinois Urbana Champaign, Illinois, **USA,** Founder, Wolfram Research, Illinois, **USA**

17. **Steven B. Krivit**, Founder, New Energy Institute, San Rafael, California, **USA**
18. **Subhas Misra,** Visiting Scientist, State University of New York , SUNY, **USA**
19. **Sudip Misra,** Visiting Researcher, Yale University, **USA,** Adjunct Professor, Ryerson University, **Canada**
20. **W. M. Wonham**, Professor Emeritus, Department of Electrical and Computer Engineering, University of Toronto, Canada**, Fellow of Royal Society, Canada**
21. **Xing Zhong Li,** Department of Physics, Tsinghua University, Beijing 100084, **P. R. China**
22. **Sthanislav Vassilyev,** Academician and Director, Russian Academy of Sciences Mocow, **Russia**
23. **Alexander Ya Kaplan,** Professor, Lomonosov Moscow State University, **Russia**
24. **Patricia Soh-Khim ONG,** Associate Professor, Faculty of Engineering, National University of Singapore, **Singapore**
25. **Srinivas N Pentyala,** Associate Professor and Director, Departments of Anesthesiology, Urology, Physiology & Biophysics, School of Medicine, Stony Brook University, Stony Brook, NY-11794-8480, **USA**.
26. **Sethuraman Panchanathan,** Director, Research Center on Ubiquitous Computing (CUbiC), Arizona State University, Tempe, Arizona, **USA**
27. **Pradeep Khosla**, Director, Robotics Research Center, Carnegie Mellon University, USA
28. **M. Srinivasan**, Director, Haptics Laboratory, Massachusetts Institute of Technology, Boston, USA
29. **S. S. Iyengar,** Chairman, Department of Computer Science, Louisiana State University, Baton Rouge, USA
30. **Anthony Constantinides,** Professor, Department of Electronics Engineering, Imperial College of Science, Technology and Medicine, London
31. **C. N. Gopinatha Reddy,** Addl. Director General of Police, Government of Andhra Pradesh, **India,** Director, Andhra Pradesh Police Academy, Hyderabad, **India**
32. **V. P. Sinha,** Professor, Dirubhai Ambani Institute of Information and communication Technology, Gandhi Nagar, Gujarat, **India**
33. **I. V. Muralikrishna,** Director and Professor, R&D, Jawaharlal Nehru Technological University, Hyderabad, **India**
34. **B. G. Siddharth,** Director General, Birla Planetarium, Hyderabad, **India**
35. **C. S. R. Prabhu,** Dy. Director General, National Informatics Centre, Hyderabad, **India**
36. **L. Pratap Reddy,** Professor, Department of Electronics and Communication Engineering, JNT University, Hyderabad, **India**
37. **A. Vinaya Babu,** Director, JNT University, Hyderabad, **India**

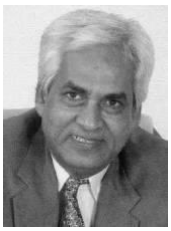
38. **Venkata Krishna,** Associate Professor, Vellore Institute of Technology, Deemed University, Vellore, Tamil Nadu, **India**
39. **P. Rama Moorthy,** Professor and Head, Department of Electronics and Communication Engineering, Government College of Technology, Coimbatore, Tamil Nadu, **India**
40. **Raju Chandrasekar,** Former Director, World Development Foundation, United Nations, **India**
41. **Rao G. Nanduri,** President, Indian Association for Medical Sciences, Hyderabad, **India**
42. **M. Mukunda Rao,** Research Professor, Biomedical Sciences, Sri Ramachandra Medical College & Research Institute (SRMC & RI), Chennai, **India**
43. **K. Rajarajeswari,** Professor, Department of Electronics and Communication Engineering, Andhra University, Visakhapatnam, **India**
44. **A. G. Ramakrishnan,** Associate Professor, Department of EE, Indian Institute of Science, Bangalore, **India**
45. **G. Ramamurthy,** Associate Professor, International Institute of Information Technology, Hyderabad, **India**
46. **Ganapati Panda,** NIT, Rourkela and Former Director, NIT, Durgapur
47. **Andras Pellionisz**, CEO, HolGenTech, California
48. **Micahel P Coyle**, Professor, Brody Medical School, East Carolina University, USA
49. **K. Karunakaran**, Vice Chancellor, Anna University of Technology, Coimbatore
50. **M. V. Ramanujam**, Vice President, E-Logic Technologies (P) Limited, Bangalore
51. **Pat Krishnan**, Chief Technology Officer, Helios and Mathesson, USA

N. PEOPLE ASSOCIATED WITH PUBLICATION AND EDITING ACTIVITIES (International Journal of Systemics, Cybernetics and Informatics, IJSCI)

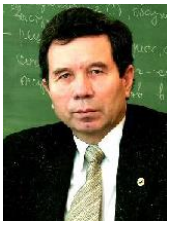
E. G. Rajan
Chief Editor
Founder President
Pentagram Research Centre
Hyderabad
India

Claudio Moraga
Editor
Hon. Patron
Pentagram Research
Professor
Department of Computer Science
University of Dortmund, Germany.

Klaus Dieter Lukoschus
Editor
Hon. Executive Director
Pentagram Research
Hyderabad, India
Professor
University of Gelsenkirchen, Germany



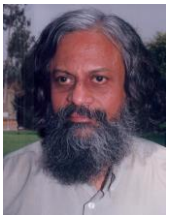
M. Mukunda Rao
Editor
Executive Director
Pentagram Research Centre
Hyderabad, India



Stanislav N. Vassilyev
Editor
Professor & Director
Institute of System Dynamics and Control
Siberian Branch of Russian Academy of Sciences, Russia

Sethuraman Panchanathan
Editor
Director
Research Center on Ubiquitous Computing (CUbiC)
Arizona State University
Tempe, Arizona.

Alexander Ya. Kaplan
Editor
Professor & Head
Brain Research Centre
Lomonosov Moscow State University
Russia



Y. S. Rajan
Editor
Principal Adviser, CII
Former Chairman, Board of Governors and Vice Chancellor
Punjab Technical University

Anthony. G. Constantinides
Professor
Imperial College of Science, Technology and Medicine,
England
United Kingdom

R. K. Shyamasundar
Editor
Senior Professor
School of Technology and Computer Science
Tata Institute of Fundamental Research, India

B. G. Siddharth
Editor
Founder
Director General
B. M. Birla Science Centre, Hyderabad, India

K Raja Rajeswari
Editor
Professor
Department of Electronics and Communication Engineering
Andhra University

Bharat Bhargava
Editor
Professor
Department of computer sciences &
Department of Electrical & Computer Engineering
Purdue University

Chivukula Sree Rama Prabhu
Editor
Dy. Director General
National Informatics Centre (**NIC**)
Hyderabad

Ankush Mittal
Associate Editor
Assistant Professor
Department of Electrical Engineering
Indian Institute of Technology
Roorkee, U.P., India

Rama Murthy Garimella
Editor
Associate Professor
IIIT, Hyderabad
Andhra Pradesh
INDIA

A. G. Ramakrishnan
Editor
Associate Professor
Department of Electrical Engineering
Indian Institute of Science
Bangalore

L. Pratap Reddy
Editor
Professor
Electronics and Communication Engineering Department
JNTU College of Engineering
Kukatpally, A.P., India

N. G. Rao
Editor
Executive Director
Pentagram Research Centre
Hyderabad
India

ONG Soh Khim
Editor
Associate Professor
Mechanical Engg. Department
Faculty of Engineering National University of Singapore

J. P. Raina
Editor
Dean of
Electrical Sciences
Vellore Institute of Technology
Vellore- 632 014
Tamilnadu, India

A. Shanmugam
Editor
Principal
Bannari Amman Institute of Technology
Sathyiamangalam,
Tamil Nadu, India

Kaiser Jamil
Editor
Former Director Grade Scientist of
Indian Institute of Chemical Technology-CSIR
Hyderabad, India

I.V. Murali Krishna
Editor
Professor & Head
Centre for Spatial Information Technology
JNT University
Hyderabad, India

A. Vinaya Babu
Editor
Professor of
Computer Science
Director, SCDE
JNT University
Hyderabad, India

Ganapati Panda
Editor
Professor & Head
Dept. of Electronics &
Communication Engg.
National Institute of
Technology
Rourkela-769008
Orissa, India

P. Rama Murthy
Editor
Principal
Thanthai Periyar
Government College
of Engineering
Vellore, India

J. V. Rao
Associate Editor
Assistant Professor
Department of
Zoology
Nizam College
Osmania University
Hyderabad, India

Sujit K Bag
Editor
Faculty of Pure &
Applied Sciences
The University of The
West Indies
Cave Hill Campus
Bridgetown, St. Michael,
Barbados

M. Ekambaram Naidu
Associate Editor
Professor & Head
Department of Computer
Science and Engineering
TRR College of
Engineering
Hyderabad, India

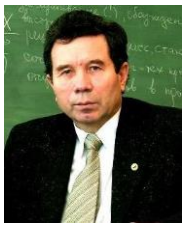
O. INVITED AND KEY NOTE SPEAKERS OF PREVIOUS CONFERENCES
(International Conference on Systemics, Cybernetics and Informatics, ICSCI)

S. S. Iyengar (LSU)

Dieter Lukoschus

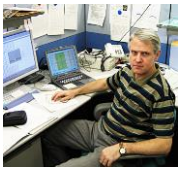
Michel McKubre
(Stanford Research)

Claudio Moraga

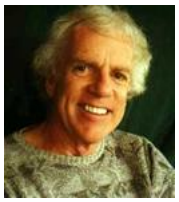


S. N. Vassilyev (Russia)

Peter A. Glass (Stony)



Alexander Ya Kaplan



Brian O'Leary (NASA)

Gerhard Chroust

Richard M. Stallman (MIT)

W. M. Wonham
Univ. of Toronto

Srinivas Pentyala
Stony Brooke

Paramahamsa Tewari

Danny Ng Siew L'Leong

Gary SS. Metcalf (USA)

Edmond Storms

M. Srinivasan

Matjaz Mulej

Sr. Judge M. Chawki

S. A. Patil

DoD, USA

Stephen Moo Kim

Former Assoc. Director, BARC

Y. S. Rajan

(Slovakia)

Xing Zhong Li (China)

DoJ, Egypt

Steve Krivit (USA)

Director, IARI

W. Schutzeberger (Germany)

Pradeep Khosla (CMU)

R. Sethuraman

Charles Winer (Purdue)

Dirk van Dalen Utrecht University

Steve Tyson (Australia)

Cornelis M. Keur (Consul General USA, Hyd.)

Col. Kimball (Director, S&T, US Army)

B. G. Dogra IPS

Lt Gen Patil (Indian Army)

Rajiv Sharma (IIT Madras)

Chandra Kambhamettu (Udel)

Routray (IIT Kgp)

Deepak (AIIMS, New Delhi)

B. G. Siddharth Birla Planetorium

Mohanty (IIT Kgp)

Michael Patrick Coyle Brody Medical School NC, USA

Sophia Angela Szymeczek NC, USA

Vasilieva Olga Moscow, Russia

Pat Krishnan CTO, Helios & Mathesson

Nikita V Danilovich Attache, Embassy of the Russian Federation

P. ORIGINAL CONCEPTS INTRODUCED SINCE 1984

Sl. No.	Concept	Description	Applications
1	Constructive Theory of Signals and Systems	This theory was evolved in 1984 as a paradigm of Signals and Systems for the study of signals and systems. The central idea is that signals are treated as subsets of free monoids and systems as string manipulating normal algorithms.	This theory forms a basis symbolic computation and Natural Intelligence modeling.

2	EFS(spl(A))	An Elementary Formal System developed for the formal study of non-numerical signal processing	Formal study of symbolic computation.
3	M-grammar	A grammar that connects Turing machines and Markov's Normal Algorithms by finitely specifying infinite systems which are called End justified Post-Turing (EPT) rewriting systems	Connects Chomsky's hierarchy of languages and Russian constructivism.
4	Lindenmayer Systems and their use in parallel processing of signals	A novel approach to signal processing using Aristid Lindenmayer's parallel grammar	Evolutionary type non-numerical signal processing
5	Th(k)	A logico mathematical theory for signal analysis developed in the hierarchical symantical system of languages called 'yah' due to A. A. Markov	Model theoretic approach to the theoretical study of signals and systems
6	Generalized Markov Algorithms (GMA)	The concept of Markov's Normal Algorithms which are applicable only to linear strings of symbols was extended to multi-dimensional arrays of symbols also. The GMA introduced is a variant of Caracciolo-de Fornio's S-GMA and CF-GMA.	Implementation of parallel processing systems using sequential processors
7	Constructive sets	This concept of constructive set was introduced in 1986 as a verboidal transcription defined over the alphabet A = { 0, 1 }. This led to the formulation of Algorithmic Sets, Constructive function spaces and normal algorithmic operators	Constructive sets, Artificial Intelligence, Constructive theories based on sets, functions and analysis
8	Constructive Filters	These are extended topological filters developed based on the notion of Constructive Sets	Model Theoretic Study of Systems
9	Cellular Logic Array Processing (CLAP)	This concept was introduced in 1990 combining the notions of GMAs and Von Neumann's Cellular Spaces. CLAP is an idealized paradigm in which many high-throughput image processing algorithms have been developed	Pattern directed array processing of signals and images
10	Geometric Filters	Constructive filters developed over von Neumann window. Geometric filter bases are used as image processing operators. A novel image algebra was developed based on these filters	Signal theory, Image algebra, Modeling and simulation
11	Pextrum	Picture Spectrum is referred here as Pextrum. This is an extended notion of signal spectrum but based on geometric filters and image algebra. Pextral representation of 2D and 3D digital images is an important outcome of this research	Image compression, Shape recognition and analysis, Solid modeling
12	Representation and processing of digital images on hexagonal grid of pixels	Introduced with the idea of getting better rotational symmetry. The concept of geometric filters and image algebra has been remoulded for hexagonal grid of pixels.	Lattice Gas Automata studies, Radar image processing, Digital version of PPI scopes
13	Morphological image processing in hexagonal digital grid	Digital morphology extended to 3D grid and hexagonal grid images	Set Theoretic approach to the study of complex shapes and structures
14	Intelligent control using constructive logical methods	A paradigm developed in 1997 to model collision processes and to model autonomous mobile target seeking systems	Space surveillance, Missile technology, Mission critical control

15	Rajan Transform (RT)	A nonlinear transform introduced in 1997 which has been identified as a powerful spectral domain pattern recognizing tool. RT is used for character recognition, object recognition, data encryption and for hidden watermarking of digital images	Signature verification, Component sorting, Object identification, Non destructive testing, Image encryption
16	Cellular automata modeling of uni-directional fluid flow	Fluid mechanics reviewed in terms of geometric filters. This is a variant of ILG-LG hybrid lattice gas model for two-phase flow simulation	Flow analysis in nuclear reactors, Jet flow study, Flame analysis
17	Filter automata	Cellular automata viewed as IIR and FIR digital filters	Non numerical discrete signal processing
18	Modeling and simulation of solidification and aggregation using geometric filters	A novel method introduced to model thermal processes, especially the solidification process of uniform and nonuniform metals	Crystal structure study, Fabrication methods of fiber reinforced castings
19	Machine vision aided component sorting	RT is used to sort components in an automated factory	Automated industries, Flexible manufacturing
20	Constructive Genetic Algorithms (CGA)	Genetic algorithms studied in the framework of Markov's Associative Calculus	Seeker head design for a homing system, Molecular and DNA computing
21	Neural automata based object recognition	Neural automaton is also called cybernetic machine. This concept has been evolved using the properties of cellular automata, genetic algorithms and Neural networks. Neural automata are trained in RT for pattern recognition purposes.	Electronic Support Measures (ESM), Electronic Warfare, Intelligent Weapon Systems, DNA computing
22	CLAP-GIS An integration of GRASS (US Army product) With CLAP	GRASS is a U.S Army public domain product. This package (version 4.1) was integrated with CLAP image processing algorithms	Remote sensing and GIS, Forest analysis and support systems
23	Flexinet	A novel networking concept which advocates genetic algorithms and cellular automata instead of optimization techniques and queuing theory for its study	Fast teletraffic, High speed internet, Road transport system, Nonlinear systems
24	Text embedding of digital images	Generally hidden watermarking of digital images employs a binary pattern (signature) embedding whereas text embedding advocates the mutation type of changes in the RT spectrum of an image, the changes being related to the alpha-numerals by a coding morphism	Image transmission with embedded text, HDTV, Police crime records, Secured Banking, Electronic Commerce
25	Set Theoretic Rajan Transform	Extension of Rajan Transform to sequences of sets	Spectral analysis of extended topological filters, Development of database and data mining tools

Q. CONFERENCE PAPERS EDITED (up to 2012)

Sl. No.	Conference	No. of Students Papers	No. of Contributed Papers from Professionals and Faculty
1	ICSCI-2004	59	127
2	ICSCI-2005	112	201
3	ICSCI-2006	155	185
4	ICSCI-2007	114	171

5	ICSCI-2008	114	184
6	ICSCI-2009	69	144
7	ICSCI-2010	40	113
8	ICSCI-2011	70	120
9	ICSCI-2012	40	70
10	ICSCI-2014	99	26

R. PARTICIPATION IN SOCIAL SERVICES

Sl. No.	Type of Service	Participated as	Remarks	Period of Service
1	Sri Sathya Sai Seva Samithi	Volunteer Bal Vikas Guru Bhajan Leader Coordinator	Participated in Sadhana Camps, Narayana Seva in Golden Rock, Chennai, IIT Kanpur, Hyderabad	Life Long Service
2	Bharat Scouts and Rovers	 Rover Leader	Attended Camps and Jamborees Served Villages in Tamil Nadu Participated in activities related to St. John Ambulance Services and Southern Railway Security Services	Served from 1966 to 1970
3	National Cadet Core Air Wing	 Air Wing Cadet	Attended NCC Camps, Vayu Sainik Camp at Air Force Station Tambaram, Chennai, Tamil Nadu Underwent Gliding Training Served as NCC volunteer in Various Government functions in Tamil Nadu	1968 to 1970