

INTERNATIONAL
INSTITUTE
OF
INFORMATION
TECHNOLOGY



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The **International Institute of Information Technology** is an autonomous, self-supporting institution established in 1998 with seed support from the Government of Andhra Pradesh to fulfil the aim of being a pioneer in IT education. The institute has been conferred Deemed-to-be-University status by the Government of India.

The institute aims to impart not just broad and interdisciplinary IT education of the highest academic quality but also train people whom the society will be proud of. The overall development of each student is achieved through an integrated curriculum that consists of a diverse set of IT courses, relevant IT research projects, day to day interaction with industry, and preparation in entrepreneurship and personality development and humanities courses. Research centres, aimed at developing IT for specific problems, provide students with opportunities to get involved in IT problem solving and innovation. Major national and international IT companies are actively involved in the institute's academic programme through their corporate schools on the campus. These include IBM, CISCO, Motorola, Signal Tree, Oracle and Satyam.

People

IIIT, Hyderabad is led by the vision and guidance of eminent personalities in the field of computer science.

Prof. Raj Reddy,
Chairman, Governing Council,
IIIT, Hyderabad.



Dr. Raj Reddy is the Herbert A. Simon University Professor of Computer Science and Robotics in the School of Computer Science at Carnegie Mellon University. He heads the governing council of International Institute of Information Technology, which is the highest decision making body in the Institute. This council is responsible for the Institute's mission and charter.



Dr. Narendra Ahuja,
IIIT, Hyderabad.

Dr. Narendra Ahuja is the Donald Biggar Willet Professor in the Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign. As a visiting professor, he has been spending increasing amounts of time at the International Institute of Information Technology. He has been involved in setting up various research centres at this Institute. His guidance has been invaluable in giving a greater research oriented perspective to the Institute.

Programs

The students are selected through an all India entrance examination conducted at all major cities in the country. The following is the list of programmes being conducted in the institute at present.

- Four year B.Tech program.
- Five year Dual Degree M.Tech program
- M.Tech in IT for Building Sciences (for architects and civil engineers)
- One year Post Graduate Diploma program
- Two year M.Tech. program
- One year Post Graduate Diploma in Bioinformatics.
- Ph.D. program



Faculty

The institute has highly qualified and experienced faculty members drawn from the best institutions worldwide with Research and Teaching experience in various areas. At present there are 16 permanent and 12 visiting faculty members. Experienced R&D experts from Corporate Schools are active participants in education development and training.

Reputed academicians and renowned people from the industry regularly conduct workshops and guest lectures.

Partner Companies

Major national and multi-national IT companies are participating in the institute's academic programmes through their corporate schools and research labs on the campus. These include:

- IBM School of Enterprise-wide Computing
- Oracle School of Advanced Software Technology
- Satyam School of Applied Information Systems
- Motorola School of Communication Technology
- Signal Tree School of Excellence in Software Development Methodologies
- CISCO Academy Training Centre



Four Year Undergraduate Program

The main aim of the UG program is to provide an environment wherein a student has the flexibility to choose course work that would enable the student to achieve his or her goals. The student can take courses in cutting edge technologies to prepare for jobs in IT, or choose a stream of study with advanced courses to prepare for higher studies and research, or both. Through projects, students develop a better understanding of the subject and also gain insight that enables them to contribute to the development of technology and society in the long run.

During their UG days, students are encouraged to be involved in R&D activity. There are two benefits:

It is a unique experience for the students. They learn how new ideas evolve, and how large systems get designed and implemented.

Research groups benefit when bright students work with them and contribute to their activities. Some of the Under Graduates might be inspired to take up their M.Tech. and Ph.D. studies with the research groups.

The curriculum makes it possible for the students to get involved and earn academic credits for their participation in R&D. To achieve "deep" involvement of a student in R&D activities, he or she is allowed to get involved in such activities at the earliest possible opportunity. This requires flexibility for such a student in scheduling his or her courses. Some of the courses, which are compulsory, could be taken up in a later year. This flexibility in scheduling courses turns out to be beneficial for both the student and the Institute. The presence of corporate schools on the campus provides means and opportunities for students to get involved in projects which give them exposure to cutting-edge technologies.

Salient Features of the Curriculum

The curriculum has been designed in keeping with the spirit of the preamble.

The following distribution of academic work in different categories shows the minimum number of credits in each category. (Also shown is the typical number of courses that it translates to. However, the number of courses is only indicative. The formal requirement is in terms of credits only.) A student is required to complete a minimum of 175 credits to receive a Bachelors degree in Computer Sciences and Engineering.

Category	Minimum Courses	Minimum Credits
Basic Sciences (compulsory: Phy, EE ,Math)	5.5	22
HSSM (3 compulsory, 3 elective)	6	24
Experimental methods	1	4
Open Electives	3	12
CS related Compulsory (scheduled)	10	43
IT related Compulsory (flexi-scheduled **)	6	29
I.T. Electives (incl. semi-core)	5	20
Project (3 course equiv.)	3	10
TOTAL	38.5	164

The concept of a 'module' has been incorporated. A module may typically run for a month or two and a suitable number of lectures per week are decided and its credit units are allocated accordingly. The purpose of a module is to allow specific exposure or skill acquisition in an area, which does not require a full semester course. It can also be used to allow short duration intensive courses to be taken by the students, when an eminent visitor is available for short time periods. Such courses by visitors may run for a few weeks, but with double the normal number of lectures in a week.

The curriculum contains

- A set of compulsory courses which should be taken in specific semesters.
- A set of courses which are compulsory, but with some flexibility as to which semester the student wishes to take them in (as advised by the academic advisor).
- A set of semi - core courses, many of which must be taken.
- Open electives: These are non-CS and non-HSSM courses.
- Elective courses (left to the student's choice as advised by academic advisor).

There are two major reasons for providing flexibility to the student in scheduling courses.

Compulsory courses with some flexibility in their scheduling are designed to allow the focused students to work on the areas of their interest, early on. This allows them to be involved in R&D as well as technology development projects, for longer durations.

Semi-core courses are relatively important. However, not all are compulsory. It is an attempt to keep the core small, at the same time indicating to the student that it would be in his interest to register for the courses in this list. If all the semi-core courses were made compulsory, very little scope would be left for choosing electives. One of the major strengths of the IIIT is the presence of corporate schools on campus and the industry-oriented courses and perspective that they offer. Students can take these courses only if there are sufficient elective slots in the curriculum, which would perhaps not be available if the semi-core courses are made compulsory.

Students can also undertake an 'Independent Study' or a 'Mini Project' whenever they can accommodate it in their course plan. This allows students to get involved in the research and consultancy projects undertaken by the Institute. However, students are allowed to undertake a maximum of 8 credit units

of course work in this way. This limit exists to ensure that students get sufficient breadth. Besides these mini projects, every student is required to undertake a year-long project in the final year.

Every course is assigned requisite number of lectures, tutorials and lab hours. In the notation a-b-c-d, a is the number of lecture hours per week, b is the number of tutorials per week, c is the number of lab hours per week and d is the total number of credits which are calculated by the formula $d = a + (b + c) \cdot 0.5$.

First Year First Semester		
Course Number	Course Name	Credits
MA1000	Maths I	3-1-0-4
SC1000	Physics I	3-1-0-4
CS1000	Computer Programming	3-1-3-5
SC1390	Applied Mechanics	3-1-0-4
CS1010	IT Wkshp-1: Comp. Sys & Env	1-0-2-2
LN1000	English	3-1-0-4

First Year Second Semester		
Course Number	Course Name	Credits
MA1010	Maths II	3-1-0-4
SC1001	Physics II	3-1-0-4
CS2100	Data Structures	3-1-3-5
CS2200	Computer Organization	3-1-0-4
ET1001	Basic Electrical Science	3-1-0-4
HS2000/LN1001	Philosophy/English	3-1-0-4

Second Year First Semester		
Course Number	Course Name	Credits
MA3200	Mathematics III (Discrete Math)	3-1-0-4
ET2055 *	Electric Analog Circuits	3-1-3-5
CS3300	Operating Systems	3-0-3-5
CS1015	Programming Utilities & Scripts	2-0-3-4
MG2100	Economics (HSS)	3-1-0-4

Second Year Second Semester		
Course Number	Course Name	Credits
CS3105	Theory of Computation	3-1-0-4
ET2052	Digital Circuits	3-1-3-5
CS3400 *	Database Mgmt Sys	3-0-3-5
CS3350 *	Computer Networks	3-0-3-5
CS3500/CS2959	Computer Graphics/Project	3-0-2-4

Third Year First Semester		
Course Number	Course Name	Credits
SC2250	Life Science & Genetics	3-1-0-4
CS3155	Compilers	3-0-3-5
CS2005	Java & OOAD	3-0-3-4
CS3750	Digital Image Processing	3-1-0-4
ET3305	Communication Theory	3-1-0-4
CS3705	Artificial Intelligence	3-1-0-4

Third Year Second Semester		
Course Number	Course Name	Credits
CS5152	Programming Languages	3-0-3-5
CS3105	Algorithms	3-0-3-5
MG3400	Entrepreneurial Skills & Management	3-1-0-4
CS4760	Multimedia Systems	3-1-0-4
CS3725	Natural Language Processing I	3-1-0-4
ET3100	Digital Signal Processing	3-1-0-4
ET3306	Advanced Communication Theory	3-1-0-4
	Distributed DBMS	3-0-1-4
CS3108	Distributed Computing	3-0-1-2

Fourth Year First Semester		
Course Number	Course Name	Credits
CS3600	Software Engineering	3-0-3-5
MG3000	Organizational Behaviour	3-1-0-4
CS4775	Soft Computing	3-1-0-4
ET3600	Introduction to VLSI	3-1-0-4

ET3601	Digital Design with VHDL	3-1-0-4
CS4358	Performance Evaluation of Computer Networks	3-1-0-4
CS4405	Data Warehousing & Data Mining	3-1-0-4
ET3290	Embedded Systems & Appliances	2-0-3-4
CS4975	Major Project I	0-2-6-4

Fourth Year Second Semester		
Course Number	Course Name	Credits
	Elective	3-1-0-4
	Elective [Open/IT]	3-1-0-4
CS4976	Major Project II	0-0-12-6
	HSSM	3-1-0-4

- Courses annotated with a * are compulsory but may be taken later/earlier by the student. The schedule indicated here is only a suggested one. The slot is actually an elective slot.
- An elective slot may be filled by choosing a Semi-core course, an IT elective, an open elective or an HSSM (Humanities, Social Sciences and Management) course as long as the minimum requirements in each of the categories is satisfied.
- The minimum number of credit units required for obtaining a Bachelor of Technology in Computer Sciences and Engineering is 175.
- A student can opt for a full semester of project work in the final semester to do substantial work at an industry or at a research centre (possibly away from IIIT). However, he/she should ensure that he/she does fulfil the minimum course requirements in each category (such as HSSM, open electives, etc.). In particular, the student must schedule the HSSM course, normally taken in the final

semester, to an earlier semester (under an elective slot) to fulfil the minimum HSSM requirement.

- An open course is defined to be a course outside the I.T. and HSSM areas.

UG Elective Courses

Visual Information Technology		
Course Numbers	Course Names	Credits
CS3750	Digital Image Processing	3-1-0-4
CS4770	Multimedia Systems	3-1-0-4
CS3755	Computer Vision and Pattern Recognition	3-1-0-4
CS3500	Computer Graphics	3-1-0-4
CS3760	Advanced Signal and Image Processing	3-1-0-4
CS4500	Advanced Computer Graphics	3-1-0-4
CS3501	Basics of Computer Graphics (Half Course)	3-1-0-2
CS4760	Advanced Computer Vision	3-1-0-4
CS4766	Soft Computing	3-1-0-4

Artificial Intelligence and Natural Language Processing		
Course Numbers	Course Names	Credits
CS3725	Natural Language Processing I	3-1-0-4
CS3726	Natural Language Processing II	3-1-0-4
CS4370	Grammar based Processing	3-1-0-4
CS4745	Natural Language Semantics *	3-1-0-4
CS4740	Statistical Methods in NLP	3-1-0-4
CS4748	Speech Processing	3-1-0-4
HS4890	Navya-Nyaya (Half Course)	3-1-0-2
HS4895	Panini's Ashtadhyai (Half Course)	3-1-0-2

Networking		
Course Numbers	Course Names	Credits
CS4358	Performance Evaluation of Computer Networks	3-1-0-4
IT3355	Network Management	3-1-0-4
IT3336	Network Services Management	3-1-0-4
CS3360	Mobile Communications and Networks	3-1-0-4

Data Engineering		
Course Numbers	Course Names	Credits
CS4401	Distributed Database & Management Systems	3-1-0-4
CS4405	Data Warehousing and Data Mining	3-1-0-4
CS3401	Advanced Database Systems	3-1-0-4
CS4405	Distributed Database Systems	3-1-0-4
CS4401	Data Warehousing and Data Mining	3-1-0-4
CS4475	E-Commerce Technologies	3-1-0-4
CS3450	Web Information Systems	3-1-0-4
CS3490	Information Systems Security	3-1-0-4
CS4775	Multi-Agent Systems	3-1-0-4
CS3480	Workflow Management Systems (Half-Course)	3-1-0-2
CS3481	E-Services and E-Contracts (Half-Course)	3-1-0-2
CS3290	Internet Appliances	3-1-0-4
CS4410	Spatial Database Systems and GIS	3-1-0-4
CS3400	Introduction to Data Management (Half Course)	3-1-1-2

Digital Signal Processing and Communications		
Course Numbers	Course Names	Credits
ET3305	Communication Theory	3-1-0-4
ET3306	Advanced Communication Theory	3-1-0-4
ET3100	Digital Signal Processing	3-1-0-4

ET3105	Signals & Systems	3-1-0-4
CS4110	Cryptography	3-1-0-4
ET3310	Digital Communications	3-1-0-4
ET6300	Error Control Coding	3-1-0-4
ET6320	Data Compression	3-1-0-4
MA4500	Stochastic Processes	3-1-0-4

VLSI and Embedded Systems		
Course Numbers	Course Names	Credits
ET3600	Introduction to VLSI	3-1-0-4
ET3601	Digital Design with VLSI	3-1-0-4
ET3650	VHDL	3-1-0-4
ET3602	Architecture and Programming of CPLDs/FPGAs	3-1-0-4
ET3102	Application of DSP	3-1-0-4
ET3603	Verification and Testing	3-1-0-4
ET3604	Analog and Mixed Signal Design	3-1-0-4
ET3290	Embedded Systems and Appliances	2-0-3-4

Humanities, Social Sciences and Management		
Course Numbers	Course Names	Credits
HS2000	Philosophy	3-1-0-4
HS2780	Science Technology & Society	3-1-0-4
MG2100	Economics	3-1-0-4
HS2280	History & Social Sciences	3-1-0-4
HS2550	Hypermedia Art & Fiction	3-1-0-4
MG3000	Conventional Management	3-1-0-4
HS2051	Vedanta	3-1-0-4
MG3001	Organizational Behaviour	3-1-0-4

Research

The institute believes in research that is relevant to solving real life problems. Each of the several research centres at the institute aims at interdisciplinary research with focus on problems in a selected domain. This provides students with opportunities to get involved in current research requiring considerable creativity and innovation. Each centre comprises of institute faculty, research staff, students and visiting domain experts from collaborating organizations.



Projects at the IIIT

What sets the IIIT apart is the encouragement it gives students to undertake projects that have social relevance. Real life problems are identified and students are encouraged to engineer innovative solutions to solve them, so as to contribute to society in a direct and effective manner.

A number of research projects are also undertaken at the IIIT, which aim at developing cutting edge technologies and expertise.

Students have the opportunity to take up internship programmes at various firms in course of their study, giving them a feel for working on projects in an industry environment.

Many students have submitted research papers at reputed conferences.

Research Centres

Center for Visual Information Technologies
 Information Security
 Data Engineering
 VLSI and Embedded systems
 Digital Signal Processing and Communications
 Language Technologies Research Centre
 IT for Education
 IT for Indian society
 IT for Railways
 Intelligent Buildings
 Electronic Commerce



Infrastructure

The institute is located on a campus of 62 acres. It is fully residential in nature and hence is a self-contained unit. There are 6 buildings that house the corporate schools. In addition to this, the academic building has lecture halls, tutorial rooms,

computer and electronics labs and offices of the administration and faculty.

All students are provided with single room accommodation. Two hostels for men and one for women have a total of about 700 rooms. An optical fibre network connects all the buildings on the campus.

All classrooms are equipped with Over Head Projectors and multimedia projectors. Seminar Halls facilitate the organization of symposiums, seminars, student-industry interactions and guest lectures.

Computational Resources

The institute has well-equipped, air-conditioned computer laboratories. The computer laboratories are equipped with the latest in both hardware and software. The PC to student ratio is 1:2. All terminals are part of an intranet (100Mbps LAN). The institute has high bandwidth Internet connectivity round the clock. Students and researchers have 24-hour access to the computational facilities. Research Centres and Corporate Schools provide high-end, specialised equipments for research and development. There is a Digital Library, which is an online archive of useful software, tutorials, text books and reference material. Some lectures are recorded and put online for the benefit of students, especially those who might have missed classes.

Library

The institute has a well-stocked air-conditioned library with a large collection of textbooks and reference material. Apart from books, students have access to the latest magazines, international journals, and research papers. The library also has a huge collection of educational CD-ROMs and copies of earlier issues of important periodicals. A new air conditioned library with 20,000-sqft floor space is under construction.

Faculty

Amba P Kulkarni
M.Tech. IIT, Kanpur

B.Krishnarajulu Naidu.
Ph.D., IIT Kanpur, 1978

C.N.Kaul, Professor
Ph.D. IIT, Kharagpur

C.V.Jawahar, Assistant Professor
Ph.D. IIT Kharagpur

Dipti Misra Sharma
Ph.D. Delhi University

Ghosal Jayati
Ph.D. Indian Statistical Institute, 1998.

Garimella Rama Murthy
Ph.D. Purdue University, USA 1989.

Kamal Karlapalem
Ph. D. Georgia Tech., USA, 1992.

Mandadi Ventakeswarlu
Ph.D. University of Waterloo, Canada.

M.B.Srinivas,
Ph.D. IISc, 1991

P.J.Narayanan
Ph. D. University Of Maryland, USA, 1992.

R.Govindarajulu, Professor
Ph.D. IIT Kanpur, 1980

Rajeev Sangal, Professor
Ph. D. University Pennsylvania, USA, 1980.

Sivaswamy Jayanthi
Ph.D. Syracuse University, USA (1992)

Sushma M Bendre
Ph.D. University of Poona in Statistics
1986

Vineet Chaitanya
Ph. D. IIT Kanpur

Vishal Garg, Assistant Professor
Ph.D. IIT Delhi

V.Ch.Venkaiah,
Ph.D. IISc, Bangalore

Guest Faculty

Arun Agarwal
Madhavi Indraganti
A.K.Kapoor
Dakshinamurthy Kolluru
Meera Marathe
Sudhakar Marathe
S.R.Parimi
Rameshwar Rao
K.V. Ramana Reddy.

Faculty Profiles

C.N. Kaul, Visiting Professor

Education

Ph.D. IIT, Kharagpur

Research Interests

Guided research of four scholars for their Ph.D. degree

Work Experience

1995-98	Visiting Professor	University of Hyderabad
1992-94	Emeritus Professor	IIT, Kharagpur
1975-92	Professor	Dept. of Maths, IIT, Kharagpur

Representative Journal Publications

A two sided iterative method for real roots of $f(x) = 0$
 Jour.Math.And Phys.Sci. 23,6,1989, 567-571

Two sided iteration with generalized bisection technique for real roots of $f(x) = 0$ Jour.Math.and Phys Sci., (1991)

A note on interval-fixed point Sam, 1993

C. V. Jawahar, Assistant Professor

Education

PhD 1997, Indian Institute of Technology, Kharagpur.

Research Interests

Computer Vision, Multimedia systems, Pattern Recognition

Work Experience

Scientist Ass. Prof., IIIT Hyderabad Dec. 2000 -- present
 CAIR Mar. 1998 -- Dec. 2000

Representative Research Publications

C. V. Jawahar and A. K. Ray, "Fuzzy Statistics of Digital Images", IEEE Signal Proc. Letters 3(1996) 225-227.

C. V. Jawahar, P. K. Biswas and A. K. Ray, "Analysis of Fuzzy Thresholding Schemes", Pattern Recognition 33(8) (2000) 1339-1349.

C. V. Jawahar and P. J. Narayanan., "Generalised Correlation for Stereo Correspondence", Fourth Asian Conf. On Computer Vision, (Jan 2000), Taiwan.

Garimella Rama Murthy, Assistant Professor

Education

Ph.D. Computer Engineering, Purdue University
 December 1989

Research Interests

Computer Networks, Neural Networks, Linguistics, Signal Processing, Number Theory

Work Experience

July 2001- Present	Visiting Assistant Professor, IIIT
Feb 2000- May 2001	Manager, Hellosoft
July 1994- Jan 2000	Defended the Mathematical Theory of Cybernetics

Representative Research Publications

G. Rama Murthy, "Multi/Infinite Dimensional Neural Networks, Multi/Infinite Dimensional Logic Theory, Logic Synthesis" Published in 1995 International Symposium on Circuits and Systems, Seattle. Submitted for Publication in the IEEE Transactions on Neural Networks.

G. Rama Murthy, "Multi/Infinite Dimensional Coding Theory: Multi/Infinite Dimensional Neural Networks: Constrained Static Optimization," Published in 1995 International Symposium on Circuits and Systems, Seattle. Submitted for Publication in the IEEE Transactions on Information Theory.

G. Rama Murthy, "Unified Theory of Control, Communication and Computation-Part 2, Multi/Infinite Dimensional System Theory: Linear/Non-Linear Dynamical Systems: Tensor State Space Representation," Published

in 1995 International Symposium on Circuits and Systems, Seattle. Submitted for Publication in the IEEE Transactions on Information Theory.

Jayanthi Sivaswamy, Associate Professor

Education

PhD, (EE) 1992 Syracuse University, USA

Research Interests

Computer and biological vision, representations for object recognition, medical image processing.
 Completed 2 Industry (NZ) sponsored projects

Work Experience

Associate Professor, IIIT, Hyderabad (July 2001 – till now).
 Lecturer (Tenured), Dept. of Electrical & Electronic Engineering, The University of Auckland, New Zealand, (Jan. 1993 - June 2001).
 Visiting Faculty, DISAM, Universidad Politécnica de Madrid, Spain, (Apr. - July 1998).

Recent Research Publications

Chan W, Coghill.G. & Sivaswamy, J. (2001) *A simple mechanism for curvature detection*, Pattern Recognition Letters, Volume 22 No. 6-7, 731-739.

Lee, M & Sivaswamy, J. (2001) *Edge detection in a hexagonal-image processing framework*, to appear in Image and Vision Computing.

Sivaswamy.J., Salcic.Z. & Ling, K.L (2001) *A real-time implementation of non-linear unsharp masking with FPLDs*, Journal of Real-time Imaging vol.7, no.2, April 2001 pp.195-202.

Jayati Ghoshal, Visiting Assistant Professor

Education

PhD (C Sc) 1998, Indian Statistical Institute, Calcutta.

Research Interests

Fuzzy Logic, neural nets, generic algorithms, pattern recognition, image processing, automated theorem prover, computer networks.

Work Experience

2001, July - present Visiting Assistant Professor, IIIT Hyderabad

2000, Dec - 2001, June Visiting TIFR, Mumbai

2000, July - August Visiting Programming Logic Group, Max Planck Institute, Saarbruecken, Germany.

2000, Jan - June Lecturer, Department of Computer Sc, University of California at Davis, USA

Representative Research Publications

Neuro-Linguistic Approach to Pattern Recognition, Fuzzy Sets and Systems, 74(1995), pp. 277-305.

A neuro fuzzy approach for pattern recognition, Neural networks, 10(1997), pp. 161-182.

A neurogenetic approach to multidimensional fuzzy reasoning for pattern classification, Fuzzy Sets and System, 112 (2000), p. 449 - 483.

Kamal Karlapalem, Associate Professor

Education

Dec 1992 Ph.D. in Database Systems, Georgia Institute of Technology, USA.

Research Interests

Database Design Methodologies and Tool Kits, Workflow Management Systems: Security, Exception Handling and Speed-Up, Agent Technologies

Work Experience

Dec 2000 - Present, Associate Professor, IIIT, Hyderabad

July 1999 - Nov 2000, Associate Professor, HKUST, Hong Kong, China

Dec 1992 - June 1999, Assistant Professor, HKUST, Hong Kong, China

Representative Research Publications

H. Gurnani and K. Karlapalem, *Optimal Pricing Strategies for Internet-based Software Dissemination*, in Journal of Operational Research Society, January 2001.

P. C. K. Hung, K. Karlapalem and J. Gray III, *Least Privilege Security in CapBasED-AMS*, in International Journal of Cooperative Information Systems, Volume 8, Number 2-3, pages 139-168, June/September 1999.

J. Yang, K. Karlapalem and Q. Li, *Algorithms for Materialized View Design in Data Warehousing Environments*, in Proceedings of 23rd International Conference on Very Large Databases (VLDB'97), Athens, Greece, pages 136-145, 1997.

M. B. Srinivas, Associate Professor

Education

PhD in High Voltage Engineering, Indian Institute of Science, Bangalore

Research interests

Diagnostic Testing of Electrical Power Apparatus Neural Networks for Condition Monitoring of Equipment Neural Hardware for Pattern Recognition in Real Time

Work Experience

1998-2001 Guest Faculty in Electronics, School of Physics, University of Hyderabad.

1997-1998 Visiting Professor, Centre for Integrated Research in Science and Engineering, Nagoya University, Japan.

1996-1997 UGC Research Fellow, School of Physics, University of Hyderabad.

Representative Research Publications

About 10 publications in refereed international journals, 15 publications in refereed international conferences and four publications in non-refereed conferences

P. J. Narayanan, Associate Professor

Education

PhD (CCS) 1992, University of Maryland USA.

Research Interests

Computer Graphics, Virtual Reality, Image Processing, Computer Vision

Work Experience

Dec 2000 onwards: IIIT, Hyderabad.

Sep 1996 - Dec 2000: Centre for Artificial Intelligence and Robotics (CAIR), Bangalore

Oct 1992 - Aug 1996: Robotics Institute, Carnegie Mellon University.

Representative Research Publications

Generalised Correlation for Multi-Feature Correspondence. (With C. V. Jawahar). Pattern Recognition. To appear in 2001.

Virtualized Reality: Constructing Virtual Worlds from Real Scenes with Takeo Kanade and Peter Rander. IEEE Multimedia, 1997.

Replicated Data Algorithms in Image Processing. (With Larry Davis) CVGIP: Image Understanding. 1992.

Rajeev Sangal, Director LTRC

Education

1980, Ph.D., University of Pennsylvania, Computer and Info. Sc.

Research Interests

NLP, Machine Translation, Speech processing, AI.

Work Experience

June 1998 - present Director, LTRC, and IIIT Hyderabad/Satyam
 May 1980 - June 1998 Faculty member, Dept. of Computer Sc., IIT Kanpur
 March 1980 - June 1982 Research Staff, LCS, MIT, Cambridge, USA

Representative Research Publications

Bharati, Akshar, Vineet Chaitanya and Rajeev Sangal, "Natural Language Processing: A Paninian Perspective", Prentice-Hall of India, New Delhi, 1995. (Book)
 Sangal, Rajeev, "LISP Programming", Tata-McGraw Hill, New Delhi, 1995. (Book)
 Bharati, Akshar, Ashok Gupta and Rajeev Sangal, "Parsing with Nesting Constraints", Proc of 3rd NLP Pacific Rim Symposium, 4-6 December 1995, Seoul, S. Korea.
 Bharati, Akshar and Rajeev Sangal, "Parsing Free Word Order Languages in the Paninian Framework", ACL93: Proc. of Annual Meeting of Association for Computational Linguistics, Association for Computational Linguistics, New Jersey, 1993a, pp. 105-111.

R. Govindarajulu, Professor

Education

1980. Ph.D., IIT Kanpur.

Research Interests

Programming Languages and Systems, Microprocessors and Computer Architecture, Computer Networks

Work Experience

Nov, 2001- present Professor, IIIT, and Hyderabad
 Visiting Professor, IIIT, Hyderabad since 1998
 Oct, 2000 – Oct, 2001 Director R&D, Essemm Information Systems, Visakhapatnam
 Jan, 1998- Oct, 2000:Principal, IBM School of Enterprise Wide Computing, IIIT, Hyd.
 Jan, 1996- Dec, 1997: Dean, Faculty of Science and Engineering, Kakatiya University, Warangal.
 1984-1998 Professor, CSE at Regional Engineering College, Warangal, AP.
 1974-1984 Asst. Professor in Electronics and Communication Engineering, REC, Warangal.
 1967-74 Lecturer in Telecomm. Engg. College of Engineering, Kakinada.
 Has a teaching experience of 35 years and has contributed significantly in starting various academic programs and setting up the computer centre at REC, Warangal.

Representative Research Publications

Rajulu, R.G and Rajaraman, V., "Execution time Analysis of Process Control Algorithms for Microcomputers", IEEE Transactions on Industrial Electronics, Vol.IE-29, No.4, Nov, 82, pp 312-319.
 Rajulu, R.G and Rajaraman.V., "Estimation of Execution time of Process control Algorithms for Microcomputers", IEEE Transactions on Industrial Electronics, Vol. IE-31, No.1, Feb 84, pp. 56-60.

Sushma M Bendre

Education

1986 Ph.D. from University of Poona in Statistics

Research Interests

Inference based on Order Statistics, Outliers, Data Modelling and Analysis, Regression Techniques and Diagnostics. Statistical consultation activities and collaborative research in applications of Statistics with other scientists working in different areas.

Work Experience

1996-present, Reader, Dept of Maths and Statistics, University of Hyderabad
 1991-96 Asst.Professor Applied Statistics Unit, ISI, Calcutta
 1985-1991 Lecturer, Dept. of Statistics, University of Bombay

Representative Research Publications

Bendre, S.M. and Kale, B.K. (1985) *Masking Effect on Tests for Outliers in Exponential Models*, Jr. American Statistical Association, 80, 1020-1025
 Bendre, S.M. and Kale, B.K. (1987), *Masking Effect on Tests for Outliers in Normal Samples*, Biometrika, 74, 891-896
 Bendre, S.M. (1995) *Discordant Observations in Regression Analysis*. In Regression Diagnostics: Lecture Notes on the Workshop on Regression Diagnostics, 1995, ISI, Calcutta.

Vishal Garg, Assistant Professor

Education

Ph.D., Energy Studies, IIT Delhi, January 2000
 B.E., Civil Engineering, MBM Engg. College, 1995

Research Interests

Task control of lighting, heating, air-conditioning using fuzzy logic. Smart occupancy sensors.
 Fuzzy Logic based protocol for wireless sensors network. Intelligent Buildings.

Work Experience

Asst. Professor. IIIT Hyderabad. March 2001 -

Representative Research Publications

Smart Occupancy Sensors to Reduce Energy Consumption:
 Vishal Garg and N.K.Bansal, Energy and Building, July 2000

Use of Intelligent Algorithms and Machine Learning in Building Automation Systems, H. Warudkar, V. Garg, Proceedings of IEEE Annual Convention and Exhibition, Mumbai, December 2000

Building Automation and Energy Savings: Vishal Garg, Proceedings of International Seminar on Environment Sustainability through Architecture and Energy Management in Buildings, New Delhi, April 1999

V. Ch. Venkaiah, Visiting Professor

Education

Ph.D., Scientific Computing, Indian Institute of Science, Bangalore, September, 1988.

Research Interests

Designing and developing algorithms in the areas of Data Compression, Cryptography, Digital Signal Processing, Combinatorial Optimization, Computational Number Theory, Mathematical Programming, and Linear Algebra. Interested in design and development of communication systems especially modems.

Work Experience

Visiting Professor at IIIT, Hyderabad on leave from IIT Delhi.

Representative Research Publications

V. Ch. Venkaiah, *Deriving Karmarkar's LP algorithm Using Angular Projection Matrix*, Proceedings of Indian Academy of Sciences (Mathematical Sciences), Vol.106, No.1, pp. 69-77, 1996.

V. Ch. Venkaiah and. Paulraj, *Subspace Rotation Using Modified Householder Transforms and Projection Matrices – Robustness of DOA Algorithms*, Signal Processing, Vol.36, No.1, pp. 91-98, 1994.

V. Ch. Venkaiah, *A Theory of Quadratic Congruence's, Technical Report*, TR-CRL-ISG-26, Central Research Laboratory, Bharat Electronics, Bangalore, 1993.

Venkateswarlu Mandadi, Professor

Education

Ph.D., Systems Design, University of Waterloo, Canada, 1977

Research Interests

Discrete Systems: Applications of digital signal processing techniques to structural systems particularly in the field of structural dynamics

Wave phenomena in solid media.

Finite element models

Probability, statistics, and stochastic processes in engineering applications

Work Experience

Courses on Engineering Mechanics, Linear Algebra, Structural Dynamics, Theory of Elements, Probability and Statistics, Data Structures, Linear analysis of Discrete Systems.

Research Publications

Published 6 papers along with Prof. K. Husseyin, U of W Canada on the general Theory of stability of systems.