ICIT 2006

9th International Conference
on
Information Technology

http://www.oits.org/cit2006/index0.html

December 18-21, 2006

Bhubaneswar, INDIA

Organized by
Orissa Information Technology Society, Bhubaneswar
http://www.oits.org

In collaboration with
Institute of Technical Education & Research, Bhubaneswar
http://www.iterindia.com

In cooperation with
IEEE & IEEE Computer Society

ICIT 2006

9th International Conference on Information Technology

http://www.oits.org/cit2006/index0.html

December 18-21, 2006

Bhubaneswar, INDIA

Organized by
Orissa Information Technology Society, Bhubaneswar
http://www.oits.org

In collaboration with
Institute of Technical Education & Research, Bhubaneswar
http://www.iterindia.com

In cooperation with
IEEE & IEEE Computer Society

Main Sponsors :

1. New Jersey Institute of Technology, USA
2. Satyam Computers Ltd.

Other Sponsors :

1. Department of Information Technology, Govt. of Orissa
2. Orissa Computer Application Centre, Bhubaneswar
3. Silicon Institute of Technology, Bhubaneswar
4. CV Raman College of Engineering, Bhubaneswar
5. Krupajal Engineering College, Bhubaneswar
6. Trident Academy of Creative Technology, Bhubaneswar

Message from the General Chairs

It is our great honor and privilege to welcome all participants to the ICIT 2006 Conference. This year the conference has reached several milestones. First, in the conference's history of eight years, IEEE Computer Society has extended its technical sponsorship for the first time; and second, the papers were subjected to a blind review process. The standard of the conference is measured by the quality of the papers presented and the acceptance rate. This year, high-quality papers were selected through the blind review process. In addition, a diverse set of six tutorials address topics from nanoelectronics to speech and image processing. Information technology research has come a long way and it is exciting that we have participants from all over the globe to discuss their current findings. A conference of this magnitude is not possible without the participation of dedicated volunteers. Our sincere gratitude goes to the Program Chairs Saraju P. Mohanty and Anirudha Sahoo for setting up a high-ranking Program Committee and putting together a fantastic technical program within very tight time constraints. Special thanks to the Steering Committee for their support and cooperation, especially Chitta Baral and Rabi Mahapatra. We are all indebted to Manoj Mishra, Ajit Das, A. K. Nayak, and M. Mallick, who coordinated the local arrangements and finance. Many thanks to the tutorial chairs, Peetabasa Pati, A. G. Ramakrishnan, and P. Behera, who put together an excellent set of tutorials and their arrangements in coordination with ITER-Bhubaneswar. S. P. Misra, former President of OITS, has been a constant source of inspiration. The guidance of the Advisory Chair S. Padhy is highly appreciated. We would like thank B. Mishra, our keynote speaker, and all the invited speakers for joining us to make the ICIT 2006 Conference a success. We are grateful to Laxmi N. Bhuyan, C. R. Das, and P. Mohapatra for their continued involvement in making this conference a major international event in this part of the world. Finally, many thanks to IEEE Computer Society, ITER, NJIT, IEEE North Jersey Section, and Satyam Computers for their strong support to the conference.

Durgamadhab Misra   **B. K. Sarap**
New Jersey Institute of Technology   *Institute of Technical Education and Research*
USA   *Bhubaneswar, India*

Message from the Technical Program Chairs

It is with distinct pleasure that we welcome you to the 9th International Conference in Information Technology (ICIT) in the temple city, Bhubaneswar, Orissa, India. Over the last nine years ICIT has evolved into a leading international conference in the region where eminent researchers around the world converge to share their research results with the community. For the first time in ICIT, we have arranged the conference track-wise. The conference consists of six different tracks: (1) Bioinformatics and Computational Biology, (2) Communication Networks and Protocols, (3) Language Processing, (4) Security, Content Protection, and Digital Rights Management, (5) Databases, Information Warehousing and Data Mining, and (6) Application Specific Software and Hardware Systems. Moreover, this will be a memorable year for ICIT, since ICIT received *in co-operation* status from the IEEE and the IEEE-Computer Society and the conference proceedings is being published by IEEE-Computer Society for the first time.

ICIT is a premier international conference and forum for high quality research in the area of Information Technology. Researchers, developers, and practitioners from academia and industry present their research findings on various topics related to Information Technology and its applications at ICIT. Almost for a decade, ICIT has been a unique forum promoting multidisciplinary and visionary research in the area of Information Technology and its applications.

ICIT 2006 had very good response in terms of paper submission. The submissions were received from all parts of the globe, including US, India, China, Pakistan, Iran, UK, Taiwan, Singapore, Italy, Japan, Nepal, Bangladesh, United Arab Emirates, Thailand, France, and Korea. Due to space limitation in the proceedings, we could only accept limited number of papers of high quality. We received a total of 231 submissions, 83 of which appeared in the proceedings. This shows the quality and competitiveness of the conference. All submitted papers had undergone double-blind-review by a strong team of reviewers and program committee members consisting of leading researchers around the globe.

We wish to express our appreciation to the track chairs, dedicated members of the Technical Program Committee and additional reviewers. We also thank the authors and invited speakers for their contributions to an outstanding technical program. Special thanks to the Steering Committee and organizing committee of ICIT for their support and cooperation. We acknowledge the high quality editing work of `Stephanie Kawada`, of the IEEE Computer Society Press for the ICIT 2006 proceedings.

We wish you a very productive ICIT 2006 and hope you will find the proceedings to be a valuable source of reference for your ongoing and future research. We hope your days at ICIT 2006 and stay at Bhubaneswar, the historic temple city, will be an enriching and enjoyable experience.

We will also look forward to your participation in ICIT 2007, same time next year.

Saraju P. Mohanty   **Anirudha Sahoo**
University of North Texas, USA.   Indian Institute of Technology, Bombay, India.

INTRODUCTION

The International Conference on Information Technology (CIT) provides a high quality forum for scientists and engineers to present their latest research findings in this rapidly changing field of information technology. CIT has grown over the year and has emerged as one of the major international conference in India. CIT 2006 continues the tradition as a premier forum for presentation of the latest research and development in the area of information technology and its application. The conference will have various technical sessions devoted to tutorials, contributed papers, and invited talks.

There will be two awards:
    (1) Amiya K. Pujari IT Award for the best paper presentated in the conference
    (2) Narayan Misra IT Award for the best paper from Orissa, presented in Conference

Topics of interest includes

- *Network - 1*
- *Network - 3*
- *Network - 4*
- *Security - 1*
- *Security - 2*
- *Security - 3*
- *Hardware/Software-1*
- *Hardware/Software-2*
- *Hardware/Software-3*
- *Network - 2*
- *Bioinformatics*
- *Network - 5*
- *Language - 1*
- *Language - 2*
- *Language - 3*
- *Database - 1*
- *Database - 2*
- *Database - 3*

KEYNOTE ADDRESS AT A GLANCE

Keynote	Speakers	Date	Time
Exploring the Network-on-Chip (NoC) Architecture Design Space	Chita R. Das Pennsylvania State University, University Park, PA 16802, email: das@cse.psu.edu	19.12.06	11:00 - 12:00
Information Fusion Algorithms in Bioinformatics	Raj Acharya, Pennsylvania State University, USA	20.12.06	09:30 - 10:30
Cyber Physical Systems: Fiction or Reality?	Rabi Mahapatra, Texas A & M University, USA.	21.12.06	09:30 - 10:30

INVITED TALKS AT A GLANCE

Invited Talk	Speakers	Date	Time
Indian Information Technology Industry : Past, Present and Future& A Tool for National Development	Somesh Mathur, Jamia Millia Islamia (Central University), Delhi and RIS for Developing Countries, India.	19.12.06	17:00 - 17:45
QoS issues for Medium Access Control in Wireless LAN	Debabrata Das, International Institute of Information Technology (IIIT) - Bangalore, India.	20.12.06	12:15 - 01:00
New Closed Loop Command Guidance for Akash Weapon System -	Saroj Kumar, LRDE, DRDO, Bangalore, India.	20.12.06	16:00 - 16:45
Distributed Video Coding: A new paradigm for wireless video	Gagan Rath, INRIA, France.	21.12.06	12:15 - 01:00

TUTORIALS AT A GLANCE (on December 18)

Tutorial	Speakers	Venue	Time
Building Enterprise Java Applications with Enterprise Java Beans 3.0	Debabrata Panda, Oracle Corporation, USA	ITER	10:00 - 13:00
Wireless Data Security	T. A.Gonsalves, IIT Madras and N. Usha Rani, NMS Software Ltd, Chennai.	TACT	10:00 - 13:00
Speech Processing	Mahadeva Prasanna, IIT Guwahati	Silicon	10:00 - 13:00
Beyond CMOS: Nano and Quantum Electronics	D.Mukhopadhyay, Jadavpur University	KEC	02:00 - 17:00
Data Mining for Bioinformatics: Past, present and future challenges.	Sumeet Dua, Louisiana Tech University	CV Raman	02:00 - 17:00
Gabor Filters in Image Processing	A. G. Ramakrishnan and P. B. Pati, IISc, Bangalore.	ITER	02:00 - 17:00

ORGANISING COMMITTEE

General Chairs:

1. D. Misra, New Jersey Institute of Technology (NJIT), USA

2. B. K. Sarap, Institute of Technical Education and Research (ITER), India

Program Chairs:

1. S. P. Mohanty   University of North Texas (UNT), USA

2. A. Sahoo   Indian Institute of Technology (IIT), Bombay, India

Tutorial Chairs:

1. A. G. Ramakrishnan   Indian Institue of Science (IISc), Bangalore, India

2. P. Pati   Indian Institue of Science (IISc), Bangalore, India

3. P. Behera   Utkal University, India

Organising Chairs:

1. M. Mishra   Institute of Technical Education and Research (ITER), India

2. A. K. Das   Center for IT Education (CITE), India

Steering Chair:

1. C. Baral Arizona State University (ASU), USA

Finance Chairs:

1. A Nayak, Silicon Institute of Technology, Bhubaneswar. ajit@silicon.ac.in

2. M. Mallick   Institute of Technical Education and Research (ITER), India

Publicity Chairs:

1. P. Guturu University of North Texas (UNT), USA

2. M. Satapathy   Abo Akademi University, Finland.

3. R. Mohanty Institute of Technical Education and Research (ITER), India

Advisory Chair:

1. S. Padhy (Advisory Chair) Utkal University, India

Advisors:

1. S. P. Misra Institute of Physics (IOP), India

2. R. Mahapatra   Texas A & M University (TAMU)

3. L. N. Bhuyan   University of California, Riverside (UCR)

*****

PROGRAM COMMITTEE

Bioinformatics and Computational Biology

G. Das (Track Chair)   UTA USA
A G Ramakrishnan   IIS, Bangalore, India
A. Mikler   UNT, USA
C. Myers   University of Utah, USA
D. Pal   IIS, Bangalore, India
G. Ghinea   Brunel University, UK
I. Jónyer   OSU, USA
J. Gao   UTA, USA
N. Parekh   IIIT, India
N. Stojanovic   UTA, USA
S. Bhanja   USF, USA
S. Padhy   Utkal University, India
V. Kreinovich   Univ. of Texas at El Paso, USA
Y. Wang   SMU, USA

Communication Networks and Protocols

V. Sharma (T.C.)   IIT, Bombay, India
A A Kherani Indian   IIT, Delhi, India
A. Gumaste   IIT, Bombay, India
A. Gupta   IIT, Kharagpur, India
A. K. Sarje   IIT, Roorkee, India
B. K. Choi   MTU, USA
D. Manjunath   IIT, Bombay, India
G. Saraph   IIT, Bombay, India
H. Zhu   S. D. Research Center, USA
K. Basu   UTA, USA
K. Garg   IIIT, Roorkee, India
S. Bhatnagar   IIS, Bangalore, India
S. Iyer   IIT, Bombay, India
S. Jamin   UM, Ann Arbor, USA
S. Kanhere   UNSW, Australia
S. Nandi   IIT, Guwahati, India
S. Q. Zheng   UTD, USA
W. Zhang   Iowa State University, USA

Language Processing

C Bhattacharyya (TC)   IIS, Bangalore, India
A R D Prasad   ISI, Bangalore, India
B. J. MacLennan   UT, USA
D. P. Madalli   ISI, Bangalore, India
J. Jarvi   TAMU, USA
K. Gopinath   IIS, Bangalore, India
N S Narayanaswamy   IIT, Madras, India
P. Mitra   IIT, Guwahati, India
S. B. Nair   IIIT, Guwahati, India
S. Bandyopadhyay   ISI, Kolkata, India
S. K. Jena   NIT, Rourkela, India
S. Mohanty   Utkal University, India

Security, Content Protection and Digital Rights Management

M. Kankanhalli (TC)   NSU, Singapore
A. Tyagi   Iowa State University, USA
B. Bhargava   Purdue University, USA
B. Panda   University of Arkansas, USA
L. T. Lilien   Western Michigan Univ., USA
M. Varanasi   Univ. of North Texas , USA
N. Memon   Polytechnic University, USA
O. Damani   IIT, Bombay, India
P. Guturu   Univ. of North Texas, USA
T. Acharya   Avisere, Inc., USA
V. K. Gurbani   Lucent Techn., Inc., USA

Databases, Information Warehousing and Data Mining

R. Bhatnagar (TC)   University of Cincinnati, USA
A. Ghosh   ISI, Kolkata, India
A. K. Majumdar   IIIT, Kharagpur, India
D. Misra   UAF, USA
H. Yu   University of Iowa, USA

PROGRAM COMMITTEE

K. S. Raghavan	ISI, Bangalore, India
M. Mitra	ISI, Kolkata, India
P. Mitra	IIT, Kanpur, India
P. Viswanath	IIT, Guwahati, India
R. Acharya	PSU, USA
R. Goel	Howard University, USA
S. Godbole	IBM Research Lab, India

Application Specific Software and Hardware Systems

E. Kougianos (TC)	Univ. of North Texas, USA
A. Raghunathan	NEC Labs, USA
A. Srivastava	Univ. of Maryland, USA
C. P. Ravikumar	Texas Instruments, India
D. Mukhopadhyay	Techno India (WBUT), India

K. Roy	Purdue University, USA
K. S. Chatha	Arizona State Univ., USA
M. Nourani	UTD, USA
N. Ranganathan	Univ. of South Florida, USA
P. Patra	Intel, USA
P. Seidel	SMU, USA
R. Agarwal	ASPL, India
R. Iyer	Intel, USA
R. Murgai	Fujitsu, USA
S. Adya	Synplicity, USA
S. J. Ruan	NTUST, Taiwan
S. Sur-Kolay	ISI, Kolkata, India
S. Vrudhula	ASU, USA
W. Wolf	Princeton University, USA

Additional Reviewers

A. Mukhopadhyay	Haiyun Bian	Baris Coskun	M. W. Hartong
Nikola Stojanovic	Sofia Visa	Rahul Gupta	Umapada Pal
Abanish Ku Singh	Husrev Taha Sencar	Barrington Young	Manuj Sharma
P. Shivakumara	Sridhar Dutta	Rajesh Inakota	Wei-Mei Chen
Abhishek Sharma	Jeffrey Parker	Bhaskar Sahoo	Matt England
P. K. Das	Sriparna Saha	Rajesh Kumar	Wen-Yao Liang
Alan Jeffrey	Jinsook Kim	Bin Tong	Minakshi Banerjee
P.S. Grover	Sukanta Das	Reza Zekavat	Yagiz Sutcu
Amit Sinha	Juergen Goetze	Brajesh Ku Kaushik	Mircea Ionescu
Peeta Basa Pati	Sukomal Pal	Rupak Samanta	Yanjun Zuo
Amol Dharap	Kejie Lu	Chad Yoshikawa	Mon-Chau Shie
Piyush Mishra	Suman Mitra	Ruy Le-Wild	Yi Hu
Anuj Tripathi	Krian Upatkoon	David Strand	Nishikanta Pati
Pramatha Nath Basu	Svetlana Strunjas	Sachindra Joshi	Yu-Kung Chen
Arun Sharma	Krishnendu Ghosh	Edwin Naroska	Nagib Hakim
Prasenjit Majumdar	T. Srinivasan	Sandipto Banerjee	Emir Dirik
Avadhesh Kumar	Kun-Lin Tsai	Nalin V Subramanian	Siddhartha V. Tambat
Qiming Li	Ta-Yi Huang	Giridhar Tatavarty	Neelesh Bansod
Axel Garcia	Lawrence Jenkins	Siling Wang	
R Srikanth	Thomas Oommen		

OUTLINE OF KEYNOTE ADDRESS

KEYNOTE 1: Exploring the Network-on-Chip (NoC) Architecture Design Space

Chita R. Das, Pennsylvania State University, University Park, PA 16802.

Abstract of the Keynote:

Integration of multiple cores on the same chip has signaled the beginning of communication-centric, rather than computation-centric systems. Further, technology trends have accentuated the importance of interconnect-conscious design as global wire delays do not scale down as fast as gate delays in new technologies. Consequently, on-chip interconnects, also known as Network-on-Chip (NoC) architectures, are predicted to be a major bottleneck in designing embedded System-on-Chip (SoC) architectures and high-performance multi-core architectures alike. However, unlike the traditional multiprocessor interconnects, design of scalable and high performance on-chip interconnects poses a whole set of new challenges in terms of on-chip area budget, energy/thermal efficiency, and reliability constraints. Consequently, to combat the growing concerns of interconnect designs, new architectural and technological solutions are being actively pursued. In this talk, we will discuss the NoC design challenges and summarize plausible solutions encompassing performance, scalability, power, thermal and reliability issues.

About the Speaker:

Dr. Das has been on the faculty at the Pennsylvania State University since 1986, and is currently a professor in the Department of Computer Science and Engineering. He received the Ph.D. degree in computer science from the Center for Advanced Computer Studies, University of Louisiana, in 1986.

Dr. Das's primary research interests include computer architecture, parallel and distributed computing, design and analysis of routing algorithms, processor management in multiprocessors, cluster systems, performance evaluation and fault-tolerant computing. He has published extensively in these areas. Of late, he is working on Network-on-Chip (NoC) microarchitectures, Internet QoS, multimedia servers, and mobile computing. He is currently an editor of the *IEEE Transactions on Computers* and has served on the editorial board of the *IEEE Transactions on Parallel and Distributed Systems*.

Dr. Das is a Fellow of the IEEE and a member of the ACM.

KEYNOTE 2: Information Fusion Algorithms in Bioinformatics

Raj Acharya, Pennsylvania State University, USA.

Abstract of the Keynote:

In this talk, we will present an information fusion algorithm for simultaneous clustering of sequence and microarray genomic data. The algorithm uses the Kullback Liebler distance and Extended Jaccard Coefficient for similarity. We will present experimental results using our algorithm.

About the Speaker:

Raj Acharya obtained his Ph.D from the Mayo Graduate School of Medicine in 1984. Since then, he has worked as a Research Scientist at Mayo Clinic and at GE (Thomson)-CGR in Paris, France. He has also been a Faculty Fellow at the Night Vision Laboratory in Fort Belvoir in Washington D.C. and has been a NASA-ASEE Faculty Fellow at the Johnson Space Center in Houston, Texas. He is currently the department head of Computer Science and Engineering at the Pennsylvania State University. He is on the editorial board of IEEE/ACM Transactions on Computational Biology and Bioinformatics. He is the Founding Chair of the IAPR Technical Committee on Pattern Recognition in Bioinformatics.

His main research thrusts are in the general area of Bioinformatics and Biocomputing. He was the prime architect of the PCABC Cancer Bioinformatics Datawarehouse project. He works on using information fusion techniques for genomics and proteomics. He is also developing fractal models for the DNA replication and transcription sites.

His research work is supported by grants from NSF, NIH and PHS.

His research work has been featured among others in *Businessweek, Mathematics Calendar, The Scientist, Diagnostic Imaging Biomedical Engineering Newsletter, and Drug Design.*

KEYNOTE 3: Cyber Physical Systems: Fiction or Reality?

Rabi Mahapatra, Texas A & M University, USA.

Abstract of the Keynote:

The Cyber Physical System (CPS) is going to be the next exciting domain after the Internet. This relatively new field looks to change the way that people interact with their surroundings as well as bring about an interface between technology and the physical world. The presentation begins with a short introduction to a hypothetical CPS node and various realms of CPS applications. We shall review several cases on CPS systems including some of the real projects where fictional idea of a CPS is in the process of being made reality. The presentation will cover potential challenges associated with cyber physical systems and possible mitigation approaches will be addressed.

About the Speaker:

Rabi N Mahapatra is an associate professor of Computer Science at Texas A&M University where he directs the Embedded System Research Group. He was in the faculty of IIT Kharagpur during 1984-95 and he was an academic visitor at IBM T.J Watson Research Center in 2001. His current research interests include High Confidence Embedded Systems, System-on-Chip, and VLSI Design. His is a Ford Fellow, and IEEE Distinguished Visitor. Rabi Mahapatra, Texas A & M University, USA.

*****

OUTLINE OF INVITED TALKS

TALK 1: **Indian Information Technology Industry: Past, Present and Future & A Tool for National Development.**

Somesh Mathur, Jamia Millia Islamia (Central University), Delhi and RIS for Developing Countries, India.

Abstract of the Talk:

The present study examines the growth performance of India's IT industries, with particular attention paid to the role of policy in this process. The study recognizes that emergence of a strong Indian IT industry happened due to concerted efforts on the part of the Government, particularly since 1980s, and host of other factors like Government-Diaspora relationships, private initiatives, emergence of software technology parks, clustering and public private partnerships. In this study we further look at the major parameters of the Indian IT industry and give justification for including the main factors responsible for the IT boom in India. The study has looked into the past and present trends of the Indian IT industry and has considered further needs of IT sector to act as a catalyst of growth and development. The study has examined whether the Indian IT growth does have enough lessons for other countries to model their IT policy which may help them to shape their IT industry as driver of growth and development.

About the Speaker:

Somesh K. Mathur has nearly eleven years of teaching and research experience at the Department of Economics, Jamia Millia Islamia (Central University), Delhi. While teaching at the Jamia he completed his M. Phil and PhD degrees in economics from the Centre for International Trade and Development, JNU. He has joined as Fellow at RIS in April, 2006 on deputation from the Department of Economics, JMI for two years. His area of interest lies in new trade and growth theories, TRIPS and other WTO issues. He has participated in various national and international conferences and has published in referred national and international journals. He has taught papers like Pure Theory of International Trade, Quantitative Methods, International Finance and Banking, Microeconomics and Corporate Finance to the post graduate students of the University.

TALK 2: QoS issues for Medium Access Control in Wireless LAN

Debabrata Das, IIIT Bangalore

Abstract of the Talk:

The wireless local area network (WLAN) is becoming popular due to its inherent property to support mobility and rapid developments in wireless technology for high bandwidth. However, wireless technology is yet to be mature enough to support quality of services (QoS) as wired access network. The wireless medium creates enormous challenges to provide higher bandwidth due to unguided medium as well as medium access control (MAC) protocol for efficient mapping of packet for QoS. In networking world as the inventions are

moving towards user centric, it has become imperative to support very high bandwidth for CATV along with QoS to all kinds of real time communication sessions according to dynamic requirement of users. Hence, this talk presents the major concepts of evolution of wireless MAC performance improvement till date and the challenges ahead to support very high bandwidth real time communication, like CATV in WLAN environment.

About the Speaker:

Das is a Hewlett-Packard Chair Professor at IIIT – Bangalore. Prior to joining the IIIT, Bangalore, he was working as a Optical and System Engineer at the Kirana Networks, Inc., Red Bank, New Jersey, USA. He holds a PhD from IIT Kharagpur. His research interests are: Medium access control (MAC) protocol of wireless and optical access network; QoS issues in Wireless-LAN.

TALK 3: New Closed Loop Command Guidance for Ground Weapon System

Saroj Kumar, LRDE, DRDO, Bangalore.

Abstract of the Talk:

Hundreds of Interceptors with warheads could destroy enemy targets; only a few could directly hit the target. It is desirable to achieve a miss distance of less than 50m during missile & target cross over. This puts a technological challenge on a seeker less missile like Akash especially when target maneuvers at 8g. This talk deals with improvements in accuracies of position & velocity estimates of both target and missile especially during evasive maneuver. In Ground Weapon system, the positions of both target and missile are sensed by the phased array radar BLR. Based on the position and velocity estimates of target and missile, the acceleration commands are calculated using PN Guidance law. These commands are up linked to guide the missile. Generally, missiles do have higher maneuverable capacity than targets. But, at end phase if target starts maneuvering then missile reaction time is limited due to its structure and estimates of the target & missile. It is desirable to minimize velocity lag of the target as well as the missile. The revolution in microelectronics and computing makes it possible to realize highly complex algorithms in real time.

About the Speaker:

G Saroj Kumar received his B.E degree in Electrical Engineering from NIT Roukela (formerly known as Regional Engineering College) in 1996 and the M.E. degree in Signal Processing from Indian institute of Science Bangalore in 2000. From Feb 2000 to Aug 2000 he was with Encore Software Limited, Bangalore. From Sep 2000 onwards, he is Scientist at Signal Processing Group of Electronics & Radar Development Establishment (LRDE), Defense Research & Development Organization (DRDO), Bangalore. Currently, he is the Project Coordinator of Signal & Data Processor for LCA (Tejas) Multi mode Radar. During this time, he has worked on three main projects at Signal Processing Group, namely, Signal & Data Processor (SDP) for LCA Multi Mode Radar (MMR), Radar Data Processor (RDP) for 3D Surveillance Radar and RDP for Akash Weapon System. He has also worked on Technology projects Digital Beam Forming / Space Time Adaptive Processing and Coherent Side Lobe Cancellor. He has delivered lecture on "Signal Processing and its applications" containing 12 modules in Institute of Electronics & Telecommunication Engineers (IETE), Bangalore. He is a Certified Software Test Manager from STQC IT Services, Ministry of Communication and Information Technology, New Delhi. He has reviewed tracker for Single target tracking provided by

Ericssion and presented his observations to Project Coordination Team (PCT) MMR, organized by Aeronautic Development Agency (ADA), Bangalore.

TALK 4: Distributed Video Coding: A new paradigm for wireless video

Gagan Rath, INRIA, France.

Abstract of the Talk:

Distributed source coding is a new paradigm for coding correlated sources based on the Slepian-Wolf's and Wyner-Ziv's information-theoretic results. Slepian and Wolf (SW) proved that the minimum rate for coding a binary source is equal to the conditional entropy of the source even if the other correlated source, called the side information, is available only at the decoder. Wyner and Ziv (WZ) extended the results to the lossy compression of continuous sources by demonstrating that the rate-distortion function of the source given that the correlated source is available only at the decoder is below the rate-distortion function of the source without any side information at the decoder. Though these results were known for a fairly long time, their applications had not been conceived until recently when practical and constructive encoding schemes were proposed. Presently attempts are being made to apply the principles of distributed source coding to video compression. The so-called distributed video coding is built on the results obtained from the SW and WZ coding, and some recently developed channel coding techniques for distributed source coding. The resulting codec architecture promises low-complexity video encoding where the bulk of the computation is shifted to the decoder. The immediate application scenario is the video transmission in a wireless environment from low-complexity hand-held devices. The high-complexity decoder is placed at the base-station which converts the decoded stream to the classical format for the down-link transmission to the receiving device. The complexity, cost, and delay of encoders are thus envisaged to be significantly reduced. Preliminary results with the distributed video coding indicates superior rate-distortion performance compared to the conventional intra-frame coding, but there is still a performance gap with respect to the state-of-the-art video coding, which uses inter-frame coding. In this talk, we will first present the basic concepts of distributed source coding along with some elements of information theory. Then we will talk about the start-of-the-art in distributed video coding, the current issues and challenges, and some of the future research directions in this area.

About the Speaker:

Gagan Rath received his Bachelor's degree in electronics and electrical communication engineering from the Indian Institute of Technology at Kharagpur in 1990 and the Master's and Ph.D. degrees in electrical communication engineering from the Indian Institute of Science in Bangalore, in 1993 and 1999. He is currently a senior research scientist at INRIA in France working in the TEMICS group. His current research interests are distributed source coding, scalable video coding, and joint source-channel coding for image and video transmission.

*****

OUTLINE OF TUTORIALS

TUTORIAL 1: Building Enterprise Java Applications with Enterprise Java Beans 3.0

Debabrata Panda, Oracle Corporation, USA

Abstract of the Tutorial:
The Enterprise JavaBeans (EJB) 3.0 specification has gone through a transformation unlike any other in Java Enterprise Edition 5.0. It has evolved from the previous EJB 2.1 incarnation that many considered an overly heavy and difficult component model into a powerful and flexible 3.0 standard that is the buzz of the industry. Its ease of use and popular lightweight persistence model - Java Persistence API (JPA) are setting it up to be the standard of choice for server components and persistence applications.

This tutorial will introduce and explain the EJB 3.0 concepts and API's and will present examples of how to use them. It will have two sessions followed by a hands-on lab. The first session will include using building business logic with EJB and cover EJB annotations, injection of resources, defining and using session and message driven beans, interceptors and life cycle listeners. It will also include exposing EJB3 Session beans as web services using Web services metadata introduced by Java XML web services 2.0 API.

The second session will deal with building persistence-tier of applications using EJB Java Persistence API. It will be domain modeling with EJB3 entities and examples of using the EntityManager API, named and native queries, O/R mapping and inheritance hierarchies using EJB 3.0 entities will be provided.

The attendees will learn how to server side application components using latest EJB 3.0. Oracle JDeveloper will be used for the lab.

About the Speaker:
Debabrata Panda is a Senior Principal Product Manager of the Oracle Application Server development team, where he drives development of the EJB container. He has more than 14 years of experience in the IT industry and has published numerous articles on enterprise Java technologies in several magazines and has presented at many conferences.

TUTORIAL 2:   Wireless Data Security

T. A.Gonsalves, IIT Madras and *N. Usha Rani*, NMS Software Ltd, Chennai.

Abstract of the Tutorial:
Wireless technologies are becoming increasingly popular and widely used to provide data services. Wireless LANs (WLANs) have been highly successful, but they cater mainly to shorter ranges and are seen as a

convenient extension to the familiar 802.3 LAN technology. The current service delivery environment calls for providing value-added services including voice, video and data (triple play) over a city-wide range (MAN). Even specific tweaks and improvements of the WLAN (WiFi) standards have not served the needs of MAN adequately. WiMAX(broadband wireless access) with its capabilty to provide wireless access for point-to-point and point-to-multipoint applications over larger distances promises to be the technology that makes such services possible.

Good security is the key to successful wireless data networking owing to the inherent vulnerability of the wireless medium. In this tutorial, we deal with the security issues involved in wireless technologies for data services.

In the first part of the tutorial, we cover the WiFi and WiMax technologies. We describe the architecture and components in these networks, standards (802.11 for WiFi and 802.16 for WiMAX) and challenges to service delivery. These challenges are mainly in providing the required QoS, roaming issues, interoperability and security. We compare WiFi with WiMax from the following points of view - range, throughput, operating frequency, security and bandwidth efficiency.

In the second part, we cover the security issues in WiFi, the initial proposal of WEP (Wired Equivalent Privacy) and weaknesses in WEP. We briefly cover the WPA (Wireless Protected Access), an intermediate solution to address the shortcomings of WEP. We then discuss the 802.11i standard, which is the formal replacement for WEP. The 802.16 specification for PKI-based authentication and privacy in WiMax networks is also discussed. We conclude with recommendations for secure deployment of networks which have a wireless component.

About the Speakers:
Timothy A. Gonsalves is Professor & Head of Dept of Computer Science & Engg at Indian Institute of Technology, Madras. He did his B.Tech. (Electronics) from I.I.T., Madras in 1976, M.S. (Electrical) from Rice University, Houston, Texas, in 1979 and Ph.D. (Electrical) from Stanford University, California in 1986. His research interest includes Development of products and technology in computer networks and telecommunications, especially aimed at mass markets in developing countries and Promotion of software development in rural areas.

N. Usha Rani is at NMSWorks Software Limited, in Chennai. She has a B.E. in Electronics and Communications (1984), Indian Institute of Science, Bangalore and Ph. D in Computer Science (1996), IIT, Bombay.

TUTORIAL 3: Speech Processing

Mahadeva Prasanna, IIT Guwahati

Abstract of the Tutorial:
The main aim of this tutorial will be to give an overview of Speech Processing for beginners who are interested to pursue their research work in this area. The topics will be covered in a logical sequence to explain the basics of speech processing, role of DSP in speech processing, pattern recognition issues in speech process-

ing, human-computer interaction, applications of speech processing, and finally pointers to literature, tools and databases for carrying out research in speech processing area.

About the Speaker:

S. R. Mahadeva Prasanna was born in Karnataka, India in 1971. He received the BE degree in Electronics Engineering from Sri Siddartha Institute of Technology, Tumkur, Bangalore University, India in 1994 and the MTech degree in Industrial Electronics from National Institute of Technlogy, Surathkal, India in 1997. He received the PhD Degree in Computer Science and Engineering from Indian Institute of Technology (IIT) Madras, Chennai, India, in 2004. Since August 2004 he is an Assistant Professor at Indian Institute of Technology (IIT) Guwahati, Assam, India. His research interests are in speech, audio, image, video and biomedical signal processing. His research interests also include application of pattern recognition and AI tools in the above mentioned fields. He has about 40 research papers to his credit, which are published in refereed national and international conferences and journals.

TUTORIAL 4:   Beyond CMOS: Nano and Quantum Electronics

D.Mukhopadhyay, Jadavpur University

Abstract of the Tutorial:

Physics and technology of nanoelectronic devices, resonant tunneling, single electron transistors, carbon nanotubes, molecular electronics, spintronic and superconducting devices; logic and memory applications, modeling.

Over the past four decades VLSI circuits using CMOS technology reproduced Moore's law quite well. However, it is anticipated that CMOS VLSI circuits will not offer the same advantages as of today with continuous downsizing. New technologies are therefore introduced and scaling of CMOS devices and process technology is projected to continue up to 7 nm channel length by 2020. The industry and academia are also intensifying research to invent fundamentally new approaches to information and signal processing. Although still at a primitive stage, these novel concepts, new devices based on them and the gate, logic and memory operations have shown promise for viable alternative to CMOS technology and functionalities. The present tutorial attempts to introduce the concepts and devices and create an awareness of the applications amongst young educators, researchers and industry people.

The devices may be grouped basically into three classes, namely,

1)   Semiconductor based quantum nanoelectronic devices,
2)   Carbon nanotube (CNT) devices,
3)   Molecular and bioelectronic devices.

At least one dimension of the active layers in these is in the nanometer range, hence the name nanoelectronic devices. The electronic (molecular) energy levels, band structure in the systems, transport of carriers and change of logic states in the devices; all are governed by quantum mechanical principles. The emerging logic devices may be listed as

1)   Low-Dimensional structures: both CNT FET and Quantum Wire FET,
2)   Resonant Tunneling Devices,
3)   Single Electron Transistors,
4)   Molecular Electronic Systems,
5)   Quantum Cellular Automata: electronic and molecular,
7)   Spin FET and Spin Valve Transistors,
8)   Rapid Flux Single Quantum (RFSQ).

In the proposed tutorial, the basic of the devices will be presented avoiding, as much as possible, the rigor of Quantum Mechanics. Methods of growing the structures will also be taken up. The logic, memory and other functionalities will be discussed. The switching time, power consumption and other performance metrics will be presented along with a comparison with standard CMOS devices. Moreover modeling issues of some devices, e.g., SPICE simulation of SETs, CNT FETs and RT devices will also be discussed.

About the Speaker:

D. Mukhopadhyay obtained his M.Tech and Ph.D. degrees from the Institute of Radiophysics and Electronics, University of Calcutta. He joined the Dept. of Electronics and Telecommunication Engineering, Jadavpur University, as a Lecturer in 1969. During the period from 1975 to 1977, he had been an Assistant Professor in the Dept. of Electrical Engineering, Indian Institute of Technology, Madras, where he worked on a Ministry of Defense project for fabricating high-power, high-frequency p-i-n diodes used as switching elements in high-resolution phased-array radar systems. He re-joined Jadavpur University in 1977 where he became a Professor in 1983.

TUTORIAL 5:   Data Mining for Bioinformatics: Past, present and future challenges.

Sumeet Dua, Louisiana Tech University

Abstract of the Tutorial:

Biology has become an increasingly data-driven science. In the recent years, research in computational biology and molecular medicine has accumulated enormous amounts of data. This includes genomic sequences gathered by the Human Genome Project, gene expression data from microarray experiments and protein identification and quantification data from highthroughput proteomics experiments. This rate of accumulation of data has far exceeded our capacity to analyze this data for novel and significant knowledge embedded in it using non-automated means. This has led to the evolution of a new-fangled area of multi-disciplinary research, termed Bioinformatics, defined as the science of storing, extracting, organizing, analyzing, interpreting and utilizing information from biological sequences and molecules.

Data Mining or Knowledge discovery in databases is defined as the process of extraction of interesting (nontrivial, implicit, previously unknown and potentially useful) information or patterns from large (such as biological) datasets. This type of discovery science involves development of algorithms for the (semi-)automated unsupervised acquisition of knowledge from large datasets, and has already led itself in generation of data supported hypothesis for several important and challenging problems in Bioinformatics. While the data for

knowledge discovery in Bioinformatics originates from protein, DNA sequence and genomic data, related data such as annotations, mutant information and physico-chemical characteristics are often added as well for fast and accurate Bioinformatics system development and support.

The rate and enormity of data generated and recorded in Bioinformatics is staggering. The genomic information available at the National Center for Biotechnology Information (NCBI) currently doubles every 14 months1. Industry analysts forecast that the information for genomic information and its technology will reach an annual $4 billion by 2007. There are approximately 350 molecular biology database listed till date which includes gene identification, gene expression, genetic and physical maps, sequence repositories, analysis of comparative genomics, protein sequencing and structure, protein motif, RNA sequence and functional genomics. Most of these databases are growing at exponential rates resulting in an undesired gap between the collection of data and the knowledge discovered from it. Knowledge Discovery methodologies are needed to analyze, index, represent, model, process, mine and search these 1 Source: National Center for Biotechnology Information (NCBI) large Bioinformatics databases. The need is already extensive and will continue to grow.

The challenge in Bioinformatics is not only in the rate and extent of the data collected, but also in the processing power. The ab initio folding of single small proteins takes six months on a computer rated at one petaflop (1000 trillion floating-point operations per second). Steady growth in processing power and storage will continue, probably at a higher rate, but continued development of efficient, fast and robust algorithms for unsupervised knowledge discovery in Bioinformatics will augment this growth to lead us to significant research outcomes. These research findings with eventually help us better understand the information that is encoded, transmitted and utilized in the intricate organization of the complex biological systems. It is not difficult to imagine that the demand is high for professionals with a background in Bioinformatics and is expected to grow exponentially in coming years. Training in Bioinformatics requires a strongly integrated program of interdisciplinary research activities, which employ state-of-the-art algorithms and methods on biologically relevant data.

The tutorial will present, in an amalgamated format, data mining methods as applied to Bioinformatics applications. Attendees in this area will be will be presented with algorithmic design principles which give rise to bioinformatics techniques as a means of understanding and developing current and future analytical approaches. The tutorial will be concentrated in the following key disciplines:

1. Data Mining: Technology and Applications
2. Mining Gene Expression Data for Physiological Discovery
3. Challenges and Solutions in Protein Data Mining
4. Emerging Scientific and Educational Opportunities in Data Mining for Bioinformatics.

About the Speaker:

Sumeet Dua, Ph.D., is an Assistant Professor of Computer Science and Upchurch Endowed Professor at the College of Engineering and Science, Louisiana Tech University. He is also the Coordinator of Information Technology Research there.

He directs the Data Mining Research Laboratory (http://dmrl.latech.edu) and an Adjunct Assistant Professor of Research, School of Medicine at Louisiana State University Health Sciences Center, New Orleans, LA. More details about him could be obtained from his personal website http://www.latech.edu/~sdua.

TUTORIAL 6: Gabor Filters in Image Processing

A. G. Ramakrishnan and P. B. Pati, IISc, Bangalore.

Abstract of the Tutorial:

Gabor formulated a function for both as well as spectral analysis of music signals in 1947. Ever since these functions, called after him as Gabor functions, have extensively been used for signal analysis. These functions, in their 2D form, are used for various kinds of image analysis applications. They are used for texture segmentation, face detection and recognition, text detection and localization in document images, script identification in multi-script scenarios etc. The advantages of Gabor filters over other features are many of which (i) that they simulate the human visual system, (ii) that they are direction dependent, (iii) that they are both localizable in space and frequency, (iv) they meet the equality criteria in the uncertainty principle, are some worth mentioning.

The present tutorial would deal with introduction to the various properties of Gabor filters, various applications, in brief, for image analysis algorithms. We would also give an application specific introduction to extraction of text from complex images and script identification in multiscript scenarios.

About the Speaker:

A. G. Ramakrishnan is an Associate professor with the Department of Electrical Engineering at Indian Institute of Science, Bangalore. He holds a PhD from IIT Madras. He has been teaching subjects like Digital Image processing, Computer vision, Biomedical Signal processing and Biometrics at IISc, Bangalore. He has guided both Masters and Ph.D. students in areas related to biomedical signal processing, image processing, pattern recognition and speech processing. He has a rich experience of industry interaction. He is a fore-runner in development of language technologies for various Indian languages in the field of OCR and speech synthesis. He is a Member of the Working Groups on Character Recognition and Speech Technology of the Linguistic Data Consortium on Indian Languages.

Peeta Basa Pati is currently pursuing his doctoral studies at the Department of Electrical Engineering, Indian Institute of Science, Bangalore, India. He did his Bachelor in Engineering (EE) from REC-Rourkela and MS (EE) from Indian Institute of Science, Bangalore. He is a Microsoft fellow since year 2005. His research interests include document analysis, script identification in multi-script scenarios, OCR for Indian scripts.

****

MAIN PROGRAM

VENUE : Hotel Crown, Bhubaneswar

DECEMBER 19, 2006 (Tuesday)

08:00 - 10:00   REGISTRATION

10:00 - 10:45   Inaguration

10:45 - 11:00   Tea Break

11:00 - 12:00   INAUGURAL KEYNOTE ADDRESS-1
Chita R. Das, Pennsylvania State University, USA

12:00 - 13:00   SESSION 1A - Network - 1

- A Tabu Search based algorithm for Multicast Routing with QoS Constraints -- Nejla Ghaboosi and Abolfazl Toroghi Haghighat (Islamic Azad University, Iran)

- Intelligent Query Tree (IQT) Protocol to Improve RFID Tag Read Efficiency -- Naval Bhandari, Anirudha Sahoo and Sridhar Iyer (Indian Institute of Technology - Bombay, India)

- Bridging the gap between Reality and Simulations: An Ethernet Case Study -- Punit Rathod, Srinath Perur and Raghuraman Rangarajan (Indian Institute of Technology - Bombay, India)

- Performance of Sniff and Embark MAC Protocol for Real-Time Traffic in Wireless LANs -- Aditya Dhananjay and Debabrata Das (International Institute of Information Technology - Bangalore, India)

Parallel Session

12:00 - 13:00   SESSION 1B - Network - 2

- Complexity Analysis of Group Key Agreement Protocols for Ad Hoc Networks -- Rakesh Chandra Gangwar and Anil K Sarje (Indian Institute of Technology - Roorkee, India)

- Distributed Reconfiguration for Traffic Changes in IP-Over-WDM Networks -- N. Sreenath and Balaji Palanisamy (Pondicherry Engineering College, India)

- A Self-adaptive Hybrid Channel Assignment Scheme for Wireless Communication Systems -- Ashok K Prajapati (National Institute of Technology - Durgapur, India), R. K. Ghosh (Indian Institute of Technology - Kanpur, India) and Hrushikesha Mohanty (University of Hyderabad, India)

- QoS Constrained Adaptive Routing Protocol For Mobile Adhoc Networks -- Vinod Kone and Sukumar Nandi (Indian Institute of Technology - Guwahati, India)

13:00 - 14:00   Lunch Break

14:00 - 15:45   **SESSION 2A - Network - 3**

- Enhancing Fault-Tolerant in Distributed ME Algorithm -- Sukendar P Reddy, Nityananda Sarma and Rajib K Das (Tezpur University, India)

- Hypercube based Team Multicast Routing Protocol for Mobile Ad hoc Networks -- R Manoharan and P Thambidurai (Pondicherry Engineering College, India)

- Incentive Driven Grid Scheduling -- Anitha Mohanraj and N. Rajkumar (Sri Ramakrishna Engineering College, Coimbatore, India)

- A strategy to reduce the control packet load of MANETs with bidirectional links using DSR -- Tamilarasi M and Palanivelu T.G. (Pondicherry Engineering College, India)

- A New Algorithm of Worm Detection and Containment -- Xiong Yang (ChangZhou Institute of Technology, China)

- Uplink Shared Channel in 3rd Generation (UMTS) Cellular System: Performance Analysis and Enhancement -- Manju Sarvagya and Ratnam V. Rajakumar (Indian Institute of Technology - Kharagpur, India)

Parallel Processing

14:00 - 15:45   **SESSION 2B - Bioinformatics**

- Estimating neutral divergence amongst Mammals for Comparative Genomics with Mammalian scope -- Jeevanlal Rana and Anup Bhatkar (Maulana Azad National Institute of Technology, India)

- Promoter Recognition using Dinucleotide Features : A Case Study for E.Coli -- Sobha Rani T, Durga Bhavani S and Raju Bapi S. (University of Hyderabad, India)

- Efficient Two-stage Fuzzy Clustering of Microarray Gene Expression Data -- Anirban Mukhopadhyay (University of Kalyani, India), Ujjwal Maulik (Jadavpur University, India) and Sanghamitra Bandyopadhyay (Indian Statistical Institute - Kolkata, India)

- Face Detection by using Skin Color Model based on One Class Classifier -- Rudra Hota, Vijendran Venkoparao and Saad Bedros (Honeywell Technology Solution Lab, Bangalore, India)

- Evaluating the Association of Mitochondrial SNP Haplotypes with Disease Phenotypes using a Novel in silico Tool E-MIDAS -- Anshu Bhardwaj and Shrish Tiwari (Centre for Cellular and Molecular Biology, India)

- Ayurinformatics- the application of bioinformatics in the ayurvedic system of medicine -- Laxmi Shankar Rath (Jagannath Institute for Technology and Management, India)

- Electroencephalograph signal Analysis During Bramari -- Shrishail Patil (Bharati Vidyapeeth Deemed University College of Engineering, Pune, India) and Dattatraya Bormane (Bharati Vidyapeeth's College of Engineering for Women, Pune, India)

15:45 - 16:00   Tea Break

16:00 - 16:45   SESSION 3A - Network - 4

♦   An Analytical Framework for Route Failure Time of Multiple Node-Disjoint Paths in Mobile Ad hoc Networks -- Ash Mohammad Abbas (Aligarh Muslim University, India)

♦   Seamless Network Management In Presence of Heterogeneous Management Protocols for Next Generation Networks -- Sri Karthik Bhagi (International Insitute of Information Technology - Bangalore, India), Manish Jaiswal (International Insitute of Information Technology - Bangalore, India), Vasant Menon (International Insitute of Information Technology - Bangalore, India), Vidhya Kannan (Hewlett Packard Inc, Bangalore, India), Shobha Venkobarao (Hewlett Packard Inc, Bangalore, India), Asoke Talukder (International Insitute of Information Technology - Bangalore, India) and Debabrata Das (International Insitute of Information Technology - Bangalore, India)

♦   A Contention Window Based Differentiation Mechanism for providing QoS in Wireless LANs -- Mayank Mishra and Anirudha Sahoo (Indian Institute of Technology - Bombay, India)

Parallel Session

16:00 - 16:45   SESSION 3B - Network - 5

♦   Intrusion Detection in Mobile Ad-Hoc Networks: A Mobile Agent Approach -- Upinder Kaur and R. B. Patel (Maharishi Markandeshwar Engineering College, India)

♦   Design and Evaluation of a Distributed Diagnosis Algorithm in Dynamic Fault Environments For Not-Completely Connected Network -- Pabitra Khilar and Sudipta Mahapatra (Indian Institute of Technology - Kharagpur, India)

♦   A Hybrid Group Key Management Scheme for Two-Layered Ad Hoc Networks -- Minghui Zheng, Jianhua Zhu and Guohua Cui (Huazhong University of Science & Technology, China)

16:45 - 17:00   Tea Break

17:00 - 17:45   Invited Talk 1

♦   Indian Information Technology Industry : Past, Present and Future& A Tool for National Development -- Speaker: Somesh Mathur, Jamia Millia Islamia (Central University), Delhi and RIS for Developing Countries, India.

DECEMBER 20, 2006 (Wednesday)

08:30 - 09:30   REGISTRATION

09:30 - 10:30   KEYNOTE ADDRESS - 2
                       Raj Acharya, Pennsylvania State University, USA.

10:30 - 12:00   SESSION 4A - Security - 1

- A new collision resistant hash function based on optimum dimensionality reduction using Walsh-Hadamard transform -- Mohammad Hasan Savoji and Barzan Mozafari (Shahid Beheshti University, Iran)

- Modeling Chinese Wall Policy Using Colored Petri Nets -- Zhao-Li Zhang, Fan Hong and Jun-Guo Liao (Huazhong University of Science and Technology, China)

- A Simple Geometric Approach for Ear Recognition -- NagaShailaja Dasari and Phalguni Gupta (Indian Institute of Technology - Kanpur, India)

- Universal Designated Multi Verifier Signature without Random Oracles -- Shailaja G, Phani Kumar Kancharla and Ashutosh Saxena (Institute for Development & Research in Banking Technology, India)

- Version Control using Cryptographic Access Control -- Ganesan Kaliya Perumal (Vellore Institute of Technology, India) and Anandhan R. (HCL Technologies Ltd, India)

- CARMA: Cellular Automata-based Remote Mutual Authentication -- Somanath Tripathy (Indian Institute of Technology - Guwahati, India), Sukumar Nandi (Indian Institute of Technology - Guwahati, India) and Atanu Roy Chowdhury (Infosys Technologies Ltd, India)

Parallel Session

10:30 - 12:00   SESSION 4B - Language - 1

- An HMM Based Recognition Scheme for Handwritten Oriya Numerals -- Tapan Kumar Bhowmik (IBM India Pvt. Ltd., India), Swapan Kumar Parui (Indian Statistical Institute - Kolkata, India), Ujjwal Bhattacharya (Indian Statistical Institute - Kolkata, India) and Bikash Shaw (Indian Statistical Institute - Kolkata, India)

- A hybrid transform coding for video codec -- Ezhilarsan Murugesan and Thambidurai Perumal (Pondicherry Engineering College, India)

- A New Symmetry Based Cluster Validity Index: Application to Satellite Image Segmentation -- Sriparna Saha (Indian Statistical Institute - Kolkata, India), Sanghamitra Bandyopadhyay (Indian Statistical Institute - Kolkata, India) and Ujjwal Maulik (Jadavpur University, India)

- An Ontology Mapping Method Based on Tree Structure -- Sheng Li (Huazhong University of Science and Technology, China), Heping Hu (Huazhong University of Science and Technology, China) and Xian Hu (Hubei University, China)

- Camouflage Defect Identifiaction: A Novel Approach -- Nagappa Bhajantri and Nagabhushan P (University of Mysore, India)

- Swara Identification for South Idian Classical Music -- Rajeswari Sridhar and Geetha T V (Anna University, India)

12:00 - 12:15   Tea Break

12:15 - 13.00   Invited Talk - 2

♦   QoS issues for Medium Access Control in Wireless LAN -- Speaker: Debabrata Das, International Institute of Information Technology (IIIT) - Bangalore, India.

13:00 - 14.00   Lunch Break

14.00 - 15.45   SESSION 5A - Security - 2

♦   A Microprocessor-based Block Cipher through Rotational Addition Technique (RAT) -- Rajdeep Chakraborty and Joyotsna Mandal (IMPS College of Engineering & Technology, India)

♦   Securing Membership Control in Mobile Ad Hoc Networks -- Jun Li, Li Su and Guohua Cui (Huazhong University of Science and Technology, China)

♦   Policy Specification and Enforcement for Detection of Security Violations in a Mail Service -- A Murali M Rao (University of Hyderabad, India)

♦   Cascaded Encryption Through Recursive Carry Addition and Key Rotation (CRCAKR) of a Session Key -- Pawan Jha and Joyotsna Mandal (Purbanchal University, Nepal)

♦   A Framework for Handling Security Issues in Grid Environment -- Sarbjeet Singh (Panjab University, India) and Seema Bawa (Thapar Institute of Engineering and Technology, India)

♦   A Palmprint Classification Scheme using Heart Line Feature Extraction -- Atul Negi (University of Hyderabad, India), Bhawani Sankar Panigrahi (Kalinga Institute of Industrial Technology, India), V. N. K. Prasad Munaga (Institute for Development & Research in Banking Technology, India) and Madhabananda Das (Kalinga Institute of Industrial Technology, India)

Parallel Session

14.00 - 15.45   SESSION 5B - Language - 2

♦   Voice conversion by Prosody and Vocal tract modification -- Krothapalli Sreenivasa Rao (Indian Institute of Technology - Guwahati, India) and Yegnanarayana Bayya (Indian Institute of Technology - Madras, India)

♦   Using AnsProlog with Link Grammar and WordNet for QA with deep reasoning -- Chitta Baral and Luis Tari (Arizona State University, USA)

♦   Duration analysis for Malayalam Text - to - Speech systems -- Deepa P. Gopinath (College of Engineering, Trivandrum, India), Divyasree Jaganmohan (College of Engineering, Trivandrum, India), Reshmi Mathew (College of Engineering, Trivandrum, India), Rekhila S.J. (College of Engineering, Trivandrum, India) and Achuthsankar S Nair (University of Kerala, India)

♦   Recognition of Handwritten Kannada Numerals -- Nabin Sharma (Indian Statistical Institute - Kolkata, India), Umapada Pal (Indian Statistical Institute - Kolkata, India) and Fumitaka Kimura (Mie University, Japan)

♦   Utilization of Volterra Series in Speech Signal Coding -- Ghasem Alipoor and Mohammad Hasan Savoji (Shahid Beheshti University, Iran)

♦   A Novel Heuristic-based High Performance Vowel Classifier for Spoken Indian English -- Hrudaya

Ku Tripathy, K Saravanakumar and Pradip K Das (Indian Institute of Technology - Guwahati, India)

♦ A structural method for extracting features in printed characters -- Hamid Pilevar and A. G. Ramakrishnan (Indian Institute of Science, Bangalore, India)

15:45 - 16:00   Tea Break

16:45 - 17.45   Invited Talk - 3

♦ New Closed Loop Command Guidance for Akash Weapon System -- Speaker: Saroj Kumar, LRDE, DRDO, Bangalore, India.

14.00 - 15.45   SESSION 6A - Security - 3

♦ Performance Of Various Cost Functions In The Search For Strong S-Boxes And The Effect Of Varying Their Parameters -- Anirban Chakraborty, Arnab Chatterjee and S K Basu (Banaras Hindu University, India)

♦ Indirect Authorization Topologies for Grid Access Control -- Geethakumari Gopalan Nair (University of Hyderabad, India), Atul Negi (University of Hyderabad, India) and Sastry V N (Institute for Development & Research in Banking Technology, India)

♦ Crypatanalysis of Block Ciphers via Improved Simulated Annealing Technique -- Nalini N (Siddaganga Institute of Technology, India) and Raghavendra G Rao (National Institute of Engineering, India)

Parallel Session

14.00 - 15.45   SESSION 6B - Language - 3

♦ Unsupervised Change Detection in Remote-Sensing Images using One-dimensional Self-Organizing Feature Map Neural Network -- Swarnajyoti Patra (Jadavpur University, India), Ashish Ghosh (Indian Statistical Institute - Kolkata, India), Susmita Ghosh (Jadavpur University, India) and Lorenzo Bruzzone (University of Trento, Italy)

♦ Color Image Compression with Modified Forward Only Counter Propagation Neural Network: Improvement of the Quality Using Different Distance Measures -- Deepak Mishra, Subhash Chandra Bose N. , Ashutosh Dwivedi, Arvind Tolambiya, Prabhanjan Kandula, Ashiwani Kumar and Prem K. Kalra (Indian Institute of Technology - Kanpur, India)

♦ Characterizing Handwritten Devanagari Characters using Evolved Regular Expressions -- P. S. Deshpande (Visvesvaraya National Institute of Technology, India), Latesh Malik (G. H. Raisoni College of Engineering, India) and Sandhya Arora (Meghnad Saha Institute of Technology, India)

♦ Analysis of Error Sources Towards Improved Form Processing -- Ujjwal Bhattacharya, Bikash Shaw and Swapan Kumar Parui (Indian Statistical Institute - Kolkata, India)

17:45 - 19:00   Group Discussion and OITS Business Meeting

19:00 - 20:30   Cultural Programs

20:30   -   21:30   Conference Banquet

DECEMBER 21, 2006 (Thursday)

08:30   -   09:30   REGISTRATION

09:30   -   10:30   KEYNOTE ADDRESS - 3
                            Rabi Mahapatra, Texas A & M University, USA

10:30   -   12:00   SESSION 7A - Hardware / Software - 1

- ♦   An Event Notification Service based on XML Messaging on Different Transport Technologies - - Ravinder Thirumala (Indian Institute of Technology - Madras, India), Usha Rani (NMSWorks SoftWare, Chennai, India) and Timothy A. Gonsalves (Indian Institute of Technology - Madras, India)

- ♦   A Novel Approach for Static Slicing of Inter-Procedural Programs -- Swatee Rekha Mohanty (Rourkela Institute of Management Studies, India), Durga Prasad Mohapatra (National Institute of Technology - Rourkela, India) and Himansu Sekhar Behera (University College of Engineering, Burla, India)

- ♦   A linear time algorithm for constructing tree 3-spanner in simple chordal bipartite graphs -- Bhawani Sankar Panda and Anita Das (Indian institute of technology - Delhi, India)

- ♦   Energy Efficient Scheduling for Real-Time Tasks by DVS -- Mahesh Chandra Govil, Puneet Gupta and Jaideep Garg (Malviya National Institute of Technology, India)

- ♦   Design of Novel Reversible Carry Look-Ahead BCD Subtractor -- Himanshu Thapliyal (Nanyang Technological University, Singapore)

- ♦   A Domain Based Prioritized Model for Web Servers -- Ash Mohammad Abbas (Aligarh Muslim University, India)

Parallel Session

10:30   -   12:00   SESSION 7B - Database - 1

- ♦   Neuro-Fuzzy Fusion: A New Approach to Multiple Classifier System -- Saroj K. Meher (Indian Statistical Institute - Kolkata, India), Ashish Ghosh (Indian Statistical Institute - Kolkata, India), B. Uma Shankar (Indian Statistical Institute - Kolkata, India) and Lorenzo Bruzzone (University of Trento, Italy)

- ♦   Designing the Next Generation of Medical Information Systems -- Rajesh Dash, Stanley Robboy and Alan Proia (Duke University Medical Center, USA)

- ♦   A generic prototype for storing and querying XML documents in RDBMS using model mapping methods -- Saeed Hassan and Syed Irfan Hyder (Karachi Institute of Economics & Technology, Pakistan)

- WaveSim and Adaptive WaveSim Transform for Subsequence Time-Series Clustering -- Pradeep Kumar (University of Mysore, India), Naga Bhushan (University of Mysore, India) and Chouakria Douzal (TIMC-IMAG, Universite Joseph Fourier Grenoble, France)

- Improved Bitmap Indexing Strategy for Data Warehouses -- Navneet Goyal, Yashvardhan Sharma and Susheel Kumar Zaveri (Birla Institute of Technology & Science (BITS), Pilani, India)

- Fuzzy Linguistic Approach to Matchmaking in E-Commerce -- Ananta Charan Ojha (ICFAI University, Hyderabad, India) and Sateesh Kumar Pradhan (King Khalid University, Abha, Kingdom of Saudi Arabia)

12:00 - 12:15   Tea Break

12:15 - 13:00   Invited Talk - 4

- Distributed Video Coding: A new paradigm for wireless video -- Speaker: Gagan Rath, INRIA, France.

13.00 - 14.00   Lunch Break

14.00 - 15.45   SESSION 8A - Hardware / Software - 2

- DSSIS: Dictionary-based Segmented Signal Inversion Scheme for Low Power Dynamic Bus Design -- Shanq-Jang Ruan, Shang-Fang Tsai and Chun-Chih Chen (National Taiwan University of Science & Technology, Taiwan)

- A comprehensive Fault model for Quantum-dor Cellular Automata -- Biswajit Saha (Polytechnic Institute, Tripura, India), Biplab Sikdar (Bengal Engineering & Science University, India) and Samir Roy (National Institute of Technical Teachers Training & Research, India)

- Aggregation Pheromone Density Based Clustering -- Susmita Ghosh (Jadavpur University, India), Megha Kothari (Jadavpur University, India) and Ashish Ghosh (Indian Statistical Institute - Kolkata, India)

- Reversible Implementation of Densely-Packed-Decimal Converter to and from Binary-Coded-Decimal Format Using in IEEE-754R+B19 -- Amir Kaivani, Ali Zakerolhosseini, Saeid Gorgin and Mahmoud Fazlali (Shahid Beheshti University, Iran)

- A Programmable Parallel Structure to perform Galois Field Exponentiation -- Kundan Kumar, Debdeep Mukhopadhyay and Dipanwita Roy Chowdhury (Indian Institute of Technology - Kharagpur, India)

- Multiobjective Genetic Algorithm for k-way Equipartitioning of a Point Set with Application to CAD-VLSI -- Sriparna Saha (Indian Statistical Institute - Kolkata, India), Susmita Sur-Kolay (Indian Statistical Institute - Kolkata, India), Sanghamitra Bandyopadhyay (Indian Statistical Institute - Kolkata, India) and Parthasarathi Dasgupta (Indian Institute of Management - Calcutta, India)

- A High Performance ASIC for Cellular Automata Applications -- Cheryl A. Kincaid, Saraju P. Mohanty, A. R. Mikler, E. Kougianos, B. Parker (University of North Texas, USA)

Parallel Session

14.00 - 15.45   SESSION 8B - Database - 2

♦   LB_HUST: A Symmetrical Boundary Distance for Clustering Time Series -- Junkui Li, Yuanzhen Wang and Xinping Li (Huazhong University of Science and Technology, China)

♦   Use of Instance Typicality for Efficient Detection of Outliers with Neural Network Classifiers -- Shirish Sane (K. K. Wagh Institute Of Engineering Education and Research, India) and Ashok Ghatol (Dr. Babasaheb Ambedkar Technological University, India)

♦   Particles with Age for Data Clustering -- Satchidananda Dehuri (Fakir Mohan University, Balasore, India), Ashish Ghosh (Indian Statistical Institute - Kolkata, India) and Rajib Mall (Indian Institute of Technology - Kharagpur, India)

♦   Cumulative Path Summary for Structurally Dynamic XML Documents -- Gururaj Ramadurgam and Sreenivasa Kumar Puligundla (Indian Institute of Technology - Madras, India)

♦   Aggregating Subjective and Objective Measures of Web Search Quality using Modified Shimura Technique -- Rashid Ali and M. M. Sufyan Beg (Aligarh Muslim University, India)

♦   A comparative analysis of discretization methods for Medical Datamining with Naïve Bayesian classifier -- Ranjit Abraham (TocH Institute of Science & Technology, Kerala, India), Jay B. Simha (Abiba Systems, Bangalore, India) and SS Iyengar (Lousiana State University, USA)

♦   GenericWA-RBAC: Role Based Access Control Model for Web Applications -- Prasanna Bammigatti (S D M College of Engineering and Technology, India) and Pralhaad Rao (University of Goa, India)

15:45 - 16:00   Tea Break

16:00 - 17:45   SESSION 9A - Hardware / Software - 3

♦   Multi Source Streaming using Multiple Description Coding with Content Delivery Networks -- Yuhyeon BAK (Electronics and Telecommunications Research Institute, South Korea), Hagyoung Kim (Electronics and Telecommunications Research Institute, South Korea), Myungjoon Kim (Electronics and Telecommunications Research Institute, South Korea) and Kyongsok Kim (Pusan National University, South Korea)

♦   An efficient parallel algorithm for finding the largest and the second largest elements from a list of elements -- Bikash Sarkar, Shahid Jamal and Bhagirath Kumar (Birla Institute of Technology, Mesra, India)

♦   Primitives for Structured Workflow Design: A Mathematical Specification and Analysis -- Sumagna Patnaik (University of Hyderabad, India)

♦   An Alternate Way to Rank Hyper-linked Web-Pages -- Debajyoti Mukhopadhyay, Anirban Kundu and Ruma Dutta (Techno India, West Bengal University of Technology, India)

♦   The Soft Computing Approach To Program Development Time Estimation -- Vandana Bhattacherjee (Birla Institute of Technology, Mesra, India)

- A Computer Aided FEM Based Numerical Solution for Transient Response of Laminated Composite PlatesWith CutOuts -- Ajaya Nayak, Ajit Shenoi and James Blake (University of Southampton, UK)

- A Computer Aided FEM Based Numerical Solution for Transient Response of Laminated Composite PlatesWith CutOuts -- Ajaya Nayak, Ajit Shenoi and James Blake (University of Southampton, UK)

- Modeling the Classical and Folk Dance Video Objects -- Rajakumar Kannan and Ramadoss Balakrishnan (National Institute of Technology - Trichy, India)

Parallel Session

16:00 - 17:45   SESSION 9B - Database - 3

- Fuzzy data mining for customer loyalty analysis -- Jay B. Simha (Abiba Systems, Bangalore, India) and Seetharam Iyengar Srinivas (Lousiana State University, USA)

- Towards an Architecture of an Image Database -- Ranjan Parekh (Jadavpur University, India)

- An Adaptive Caching Location Strategy by Location Database Clustering in PCS Networks -- Liang Hong and Yansheng Lu (Huazhong University of Science & Technology, China)

- Segmentation of Color Images using Mean Shift Algorithm for Feature Extraction -- Sudhamani M V (Siddganga Institute of Technology, Karnataka,India) and C R Venugopal C R (Sri Jayachamarajendra College of Engineering, Mysore, India)

17:45 - 18:30   Award Ceremony *(Chaired by: B. K. Sarap, ITER)*

******

REGISTRATION PARTICULARS FOR ICIT 2006

REGISTRATION FEES:

1. Participants from Educational Inst inside India: Rs.2400/-
2. Participants from Industry inside India: Rs.3000/-
3. Participants from outside India: US$220/-
4. OITS and/or IEEE or IEEE-Computer Society members may pay half the amount otherwise due to them.
5. Limited financial support for registration may be available for students depending on funds. For this purpose they may apply (email) to the organising chairs with full particulars (mkmishra_iter@yahoo.com) immediately for necessary action.
6. Payments may be made to 'icit2006' as bankdraft/crossed cheque, including in US dollars and mailed as in (g).
7. Registration form along with the Banker's check/bankdraft may be despatched in the address: Prof Manoj Mishra, Organising Chair (icit2006) and Head, IT Department, Institute of Technical Education and Research, Jagamara, Bhubaneswar 751030, INDIA.

   NOTE: Please also send soft copy of this form in the email addresses of organising chair (mkmishra_iter@yahoo.com), finance chair (ajit@silicon.ac.in) and program chair (smohanty@cs.unt.edu).

   The registration fees (a), (b), (c) and (d) entitles the registrant to a copy of the Proceedings. All types of registration includes kitbag, lunches, coffee breaks, and, participation in all Technical Sessions.

PARTICULARS FOR REGISTRATION:

(a) NAME
(b) AFFILIATION
(c) Email address
(d) Category to which you belong with appropriate reference.
(e) Particulars of Bank Draft/ crossed check, such as amount, date, bank, number, as payable to 'icit2006'.
(f) Particulars of despatch, like, when the letter is mailed, how.
(g) Date, time and mode of your arrival and departure as available
(h) Remarks, if any

Signature and Date.

FOR ADVANCE REGISTRATION:

Besides the hard copy, please send an email regarding the above to the Organising Chair (to whom the hard copy is being sent) sateeshind@yahoo.com. Participants paying in US dollars or outstation checks may preferably do advance registration since it takes some time for these checks to get encashed.

CONFERENCE VENUE & HOTEL ACCOMMODATION

Date: 18.12.2006, All tutorials are held at different local institutions as announced

Dates: 19 - 21, December, 2006: Academic programs of Conference

Venue for Academic programs: **Hotel Crown**, Bhubaneswar. The spot registration will also be possible only by request. All the authors who attends the conference must register in advance. Papers that found with out any of its authors registered will be droped from the conference program.

CONTACT PERSONS AT BHUBANESWAR

A K Das, Organising Chair
Center for IT Education (CITE),
Bhubaneswar, India.
E-mail: ajitmita@rediffmail.com
Ph.No.- 09861066366 (M)

M. Mishra, Organising Chair
Institute of Technical Education and Research (ITER),
Bhubaneswar, India.
E-mail: mkmishra_iter@yahoo.com
Ph. No. - 09861062588 (M)

D. Misra, General Chair
New Jersey Institute of Technology (NJIT),
USA
E-mail: dmisra@njit.edu
Ph. No. - 09238687133 (M)

B. K. Sarap, General Chair
Institute of Technical Education and Research (ITER),
Bhubaneswar, India.
E-mail: b_sarap@yahoo.co.in

S Padhy, Utkal Univ, Advisory Chair
Department of Mathematics, Utkal University,
Vani Vihar, Bhubaneswar 751004, India.
E-mail: spadhy04@yahoo.co.in
Ph. No- 09437204666 (M)