

## 25<sup>th</sup> National Convention of Computer Engineers and National Seminar on Networked Home Systems and Services (NHSS-2011)



*Inaugural Session: (L to R: Dr. YC Bhatt, Dr. RC Purohit, Dr. M. Chandwani, Mr. SB Sinha, Dr. SS Chahal, Mr. RN Mathur, Dr. SS Rathore, Dr. Dharm Singh)*

A three days Computer Engineers convention and National Seminar on Networked Home Systems and Services (NHSS-2011) was organized by The Institution of Engineers (India) IE(I), Udaipur local centre under the aegis of Computer Engineering Division of The IE(I) in association with The Computer Society of India: Udaipur Chapter and Special Interest Group-Wireless Networks, Department of Computer Science & Engineering of College of Technology and Engineering (CTAE), Udaipur and Techno India NJR institute of Technology, Udaipur during 4-6 Feb, 2011 at CTAE Campus, Udaipur Rajasthan.

### **Inaugural Session**

Prof. S.S. Chahal Hon'ble Vice- Chancellor, Maharana Pratap University of Agriculture and Technology, Udaipur (MPUAT), inaugurated the event. In his inaugural speech he highlighted the need for focus of information technology in reaching the masses to improve their lively hood. Prof. Chahal requested the scientist participating in the Seminar to focus on building Computer models and designs based on local requirements, so that the dependence on imported computer models and design can be reduced. Prof Chahal also released the Proceeding of Convention in the book form and Souvenir.

Guest of Honour Shri R.N. Mathur, GMTD, and BSNL Udaipur have informed the efforts being made by the government to provide Gega-bit connectivity to universities and colleges of the country. Chairman, Computer Engineering Division Shri S.B. Sinha congratulated the organizers and high lighted the activities being carried out by Computer Engineering Division Board, The Institution of Engineers (India). Prof. S.S. Rathore chairman, The Institution of

Engineers (India), Udaipur Local Centre elaborated the various activities being carried out by Udaipur Local centre.



*Guest and Participants*

### **Felicitation of Eminent Computer Engineers**



*Prof. K. R. Choudhary felicitated as eminent computer engineers of the country*  
Dr. Dharm Singh presented the detailed technical program regarding this three-day event. In the inaugural function of the convention eminent computer engineers of the country Mr. Sanjay Malhotra , Prof. K. R. Choudhary, and Prof. M. S. Gaur was facilitated followed by young engineers award.

### **Felicited via live video conferencing:**

Mr. Sanjay Malhortra, IAS and Secretary IT Govt of Rajasthan was felicitated via live video conferencing (Video over IP) in the Inaugural function as he was unable to make it to the event due to some urgent meeting called by the Hon'ble Minister of Govt. of Rajasthan. He delivered the house about the use of IT in different areas. On the request of Dr. S.S. Chahal he addressed the students for their future enlistment. Dr. Y.C. Bhatt, Honorary Secretary, IEL, Udaipur Local centre delivered vote of thanks.

The inaugural function was followed by keynote addresses of eminent experts of computer engineering Dr. K. R. Choudhary, Professor and Head department of Computer Science and Engineering, M.B.M. Engineering, JNVU, Jodhpur and Dr. Pradeep K. Sinha, Head-National PARAM Super Computing facility, CDAC-Pune.



*(Dr. Dharm Singh, Dr. SS Chahal)*

*Mr. Sanjay Malhortra, was felicitated via live video conferencing*

### **M.S. Ramanujam Memorial Lecture**

The M.S. Ramanujam memorial lecture was delivered by Dr. Manohar Chandwani, Director, Institute of Engineering and technology Indore. In his lecture he said the Information & Communication Technologies (ICT) have flourished to a large extent in outdoor (of home) services such as business, trade, Governance, industries, academia and many other walks of life. The indoor activities are also under thoughts of the researchers involved in the ICT research. The home is getting modern and advanced owing to the advancements in the network technologies and services. There has been tremendous growth in the concepts and their realizations to make home smart, ubiquitous, intelligent and automated for the betterment of human life that is getting busy in the indoor and outdoor places of home.

**IT enabled Home Technologies:** IT enabled Home Technologies (ITeH) are the set of technologies that make home networked, smart and ubiquitous. These technologies include LAN/CAN, optical fibers, wired/ wireless protocols, service oriented architecture, bandwidth and noise elimination paradigms.

Dr. Manohar Chandwani addressed the house about the technological aspects of ITeH that are influencing the life inside home. These aspects include the conceptual thinking of how to transform the ancient methods of home living into modern style of life living. The life aspects inside the home that are protocol based need to be transformed into the protocols of technologies so as to make the home appliances information technology driven. A family lives in the home with a number of appliances that provide services in the basic form while intermittent interaction with the appliances. However, the ICT has caused the man to think the use of various appliances each one of which is IT enabled and active as per the convenience of home user.



*Dr. Manohar Chandwani presenting M.S. Ramanujam memorial lecture*

### **P=NP : Polynomial Solvability of 3-SAT**

Day one of the seminar was concluded with Technical session -1. Various technical papers on challenging issues in home network design were discussed in this session. *In technical session 2* various issues in efficient communication protocols and routing protocols were presented and discussed. The highlight of the session was the keynote address by Professor Narandra Singh Chaudhari, Dean (Research and Development) regarding polynomial solvability time of 3SAT problem.

Prof. Narendra S. Chaudhari, Professor of Computer Science and Engineering, Indian Institute of Technology, Indore (M.P.) delivered talk that settles the famous millennium problem, P Verses NP. He presented deterministic polynomial algorithm for one of the NP-Complete problems, namely 3-SAT. Prof. Choudhary said that a few important areas requiring immediate investigations are: (i) Cryptosystems and Security algorithms relying on

NP-Completeness, (ii) Clustering of large data sets for Rule extraction, automated Knowledge Discovery, Classification, Pattern analysis, and Machine Intelligence, (iii) Integer linear programming formulations, and other discrete optimization problems arising in decision theory, (iv) Scheduling problems in engineering (e.g., Job-shop scheduling, Flow-shop scheduling, etc.), and, (v) Variety of other interesting NP-Complete problem like problems in Graph theory like Chromatic Number problem, Hamiltonian circuit problem, etc.

### **Wireless Sensor Networks**

In technical session-3 research papers on microwave communication were presented. Moreover Dr. Harish kumar of UIET, Chandigarh, delivered the keynote speech in this session. He said that the wireless sensor networks (WSN) target a large variety of applications ranging from volcano monitoring, home security to military and deep space applications. In his address some of the main open issues and challenges, focusing on the design and architecture of the wireless sensor networks are highlighted.

In technical Session-4 various challenges and solutions regarding the research in application of home networks in rural management, e-education and e-governance were discussed. Dr. Pragya Jain and Mr. Gopal Krishen IIT, Delhi delivered the keynote speech for the session on Parallel Processing and Grid computing. Day two concluded with poster presentation of various research works in the Computer Networking domain. The 25<sup>th</sup> National Convention celebrated its silver jubilee at Techno-India NJR Institute of Technology with a culture extravaganza followed by dinner in the evening of day-2.

### **Genetic Operators Induced Machine Learning**

Day 3 witnessed technical session 5 and 6 on network security, quality of service and cluster computing. Chirag S Thaker & S M Shah has presented a paper on “Genetic Operators Induced Machine Learning in Board Game Playing” which uses Genetic Algorithm as an optimization method that can be applied on variety of application areas like Board Game Playing, Efficient Network Packet routing algorithms and Network resource optimization. Mr. Thaker stressed that Genetic Operators are very effective tools to optimally tune the evaluation functions which are prime factors to make good moves. This will make artificial game playing programs more search efficient and faster to reach at ‘good’ solutions.

### **Valedictory Session**



*(L to R): Dr. Dharm Singh, Dr. SS Rathore, Mr. RS Vyas, NS Choudhary, Shri S.B. Sinha, RS Shekhawat, YC Bhatt*

The convention and seminar concluded with valedictory function in the afternoon of 6-02-2011.

The valedictory function began with the welcome address by Dr. S.S. Rathore, Chairman, Udaipur Local Centre. Dr. Rajveer Singh Shekhawat, Chairman CSI Udaipur was of the view that today's researcher seems to be comfortable with using a wide variety of sources of information. Prof. NS Chaudhari IIT Indore, chief guest of the valedictory session addressed the guests and participants.

The Organising Secretary Dr. Dharm Singh presented the three day's seminar and convention report and recommendations detailing out the resource person who made their presentations on the assigned topics and the presented papers in different technical sessions. He informed the house, almost 100 papers from across the country were received for the seminar out of which 43 papers were accepted for publication and presentation. 30 papers were presented in various technical sessions of the seminar.



*Shri S.B. Sinha presenting a Memento to Organizing Secretary Dr. Dharm Singh*

Chairman, Computer Engineering Division Shri S.B. Sinha congratulated the organizers and expressed his satisfaction over the excellent conduct and successful closure of the convention. The function ended with Dr. Y.C. Bhatt honorary secretary, The Institution of Engineers (India)- Udaipur Local Centre presented vote of thanks.

### **Recommendations**

1. The seminar highlighted the requirement of basic research on the mathematical models of computer engineering to further enhance the computational efficiency of various services, application and programs and for facilitating the same, there is a strong requirement of liberal funding for such mathematical investigations and real time application & investigations.
2. The seminar also highlighted the requirement of greater focus on evolutionary techniques in computer engineering, as the Computer Engineering domain is evaluation sensitive.
3. Greater emphasis of the need for a strong national broadband policy focusing on making India top broadband nations and the policies consistent towards this goal should be made feasible and easily assessable to the research community.
4. The research in the ITeH Technologies is on its way to mature technologically. The presently, the cost of ITeH is not affordable in the present economic and commercial circumstances. The related technologies need to be more advancing at lower cost.

## 25th National Convention of Computer Engineers and National Seminar on Networked Home Systems and Services (NHSS-2011)

Report prepared by Dr. Dharm Singh, HoA, Secretary, CSI, Udaipur Chapter & Convener, SIG-WNs



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the scientist participating in the Seminar to focus on building Computer models and designs based on local requirements, so that the dependence on imported computer models and design can be reduced. Prof. Chahal also released the Proceeding of Convention in the book form and Souvenir.

Guest of Honour, R.N. Mathur, GMTD, and BSNL Udaipur informed about the efforts being made by the government to provide Giga-bit connectivity to universities and colleges of the country. Chairman, Computer Engineering Division S.B. Sinha congratulated the organizers and highlighted the activities being carried out by Computer Engineering Division Board, The Institution of Engineers (India). Prof. S.S. Rathore chairman, The Institution of Engineers (India), Udaipur Local Centre elaborated the various activities being carried out by Udaipur Local centre.

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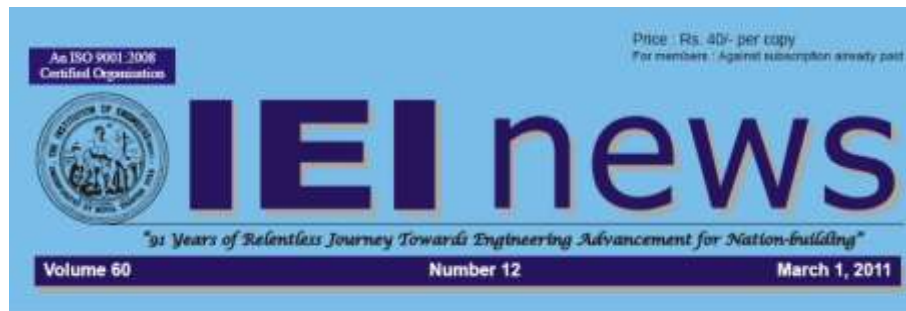
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#### **Recommendations**

1. The seminar highlighted the requirement of basic research on the mathematical models of computer engineering to further enhance the computational efficiency of various services, application and programs and for facilitating the same, there is a strong requirement of liberal funding for such mathematical investigations and real time application & investigations.
2. The seminar also highlighted the requirement of greater focus on evolutionary techniques in computer engineering, as the Computer Engineering domain is evaluation sensitive.
3. Greater emphasis of the need for a strong national broadband policy focusing on making India top broadband nations and the policies consistent towards this goal should be made feasible and easily assessable to the research community.
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Twenty-fifth National Convention of Computer Engineers at Udaipur

## Networked Home Systems and Services

The Udaipur Local Centre of the Institution in association with the Computer Society of India, Department of Computer Science and Engineering, College of Technology and Engineering (CTAE) organised the Twenty-fifth National Convention of Computer Engineers under the aegis of Computer Engineering Division during February 4-6, 2011. The Chief Guest, Prof S S Chahal, Vice-Chancellor, Maharana Pratap University of Agriculture and Technology (MPUAT), Udaipur, in his inaugural address, stressed the need for focussing on information technology in reaching masses for a better and improved livelihood. He urged the engineering community to build computer models based on local requirements rather than relying on imported models and designs. The Guest-of-Honour, Mr R N Mathur, GMTD, BSNL, Udaipur, informed that efforts were being made by the

government to provide giga-bit connectivity to universities and colleges across the country. Mr S B Sinha, Chairman, Computer Engineering Division Board of the Institution, highlighted various activities being carried out by this important Division. Dr Manohar Chandwani, Professor and Director, Institute of Engineering and Technology, Devi Ahilya University, Indore, delivered the M S Ramanujam Memorial Lecture on the topic 'IT Enabled Home Technologies'. Keynote addresses were delivered by the experts in the field. On this occasion, Mr Sanjay Malhotra, Secretary, IT & Communication, Government of Rajasthan; Dr M S Gaur, Dean Student Affairs and Professor, Computer Engineering, MNIT, Jaipur; and Dr K R Chowdhary, Professor and Head, Department of CSE, MBM Engineering College, JNV University, Jodhpur, were felicitated as eminent engineers in recognition of their valuable contributions to the society in the field of Computer Engineering. However, Mr Sanjay Malhotra, who could not attend the Convention due to his preoccupation, interacted with the participants and accepted the honour live



Prof S S Chahal releasing the Souvenir

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## Networked Home Systems and Services

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through Video Conference. This in itself was a technological breakthrough in the history of the IEI on the occasion of twenty-fifth anniversary of the National Convention of Computer Engineers. Mr K Srinivasan, Systems Engineer, TCS, Chennai; Mr S K Das, Scientist B, CMERI, Durgapur, WB; and Dr L D Golagani, Assistant Professor, College of Engineering, Andhra University, received the IEI Young Engineers Award for the year 2010-2011. On this occasion, Proceedings of the convention was brought out which was released by the Chief Guest, Prof S S Chahal. Earlier, Prof S S Rathore, Chairman of the Centre, welcomed the august gathering and highlighted various activities of the Centre. Prof Y C Bhatt Honorary Secretary of the Centre, proposed the vote of thanks. A

National Seminar on the topic 'Networked Home Systems and Services' was organised concurrently as a part of the Convention. A large number of papers on various sub-themes were presented and discussed during technical sessions. *The Seminar recommended active research on basic mathematical models for enhancing computational efficiency with the need for liberal funding encouraging such research. The other recommendation that emanated was the need for focus on evolutionary techniques in computer engineering which is evaluation sensitive. Requirement of a strong national broadband policy was strongly recommended which would be feasible and accessible to the research community.*