

ADCOM – 2001
9th INTERNATIONAL CONFERENCE ON
ADVANCED COMPUTING AND COMMUNICATIONS

PRELIMINARY PROGRAM



Bhubaneshwar, India December 16 –19, 2001
www.ADCOMxy.org, www.kiit.org/adcom2001

Sponsored by ACS, India and IEEE Computer Society

Organized by Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar

ORGANIZATION

General Chairs

Laxmi N Bhuyan
University of California
bhuyan@cs.ucr.edu

Siba P. Misra
Orissa IT Society
spmisra@dte.vsnl.net.in

Program Chairs

S Sitharama Iyengar
Louisiana State University
Baton Rouge, LA 70803
iyengar@bit.csc.lsu.edu

Bhabani P. Sinha
Indian Statistical Institute
203 Barrackpore Trunk Road,
Calcutta 700 035
bhabani@isical.ac.in

Tutorial Chairs

Prasant Mohapatra
Michigan State University
prasant@cse.msu.edu

Nabanita Das
Indian Statistical Institute
ndas@isical.ac.in

Workshop Chair

J Mohan Kumar
University of Texas, Arlington
kumar@cse.uta.edu

Organization Chair

Prashant K. Mishra
KIIT, Bhubaneswar
pkm@stpbh.soft.net

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Rabi N Mahapatra
Texas A&M University

N Chandrasekaran
Manipal Institute of IT, Bangalore.

Industry Liaison Chair

Anirban Basu
Ampersand Software
b.basu@vsnl.com

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Regional Research Lab,
Bhubaneswar.

Publication Chair

K Rajan
Indian Institute of Science,
Bangalore.

Webpub Chair

Rajkumar Buyya
Monash University
rajkumar@csse.monash.edu.au

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Sponsored by:

ACS, India and IEEE Computer Society
in co-operation with
Orissa Information Technology Society (OITS)

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Kalinga Institute of Industrial Technology (KIIT),
Bhubaneswar

Historical Tour:

The conference is arranging a tour of historical places like Puri, Konark etc. on December 19th, 2001. This will be finalized soon.

The annual conference of Advanced Computing and Communications Society (ACS) is intended to provide a forum for integration amongst industries, professionals, researchers and government policy planners with a view to sharing ideas, report findings, discuss products and define future directions. ADCOM has grown over the years and has emerged as a major international event in India focused at the growing computing community. The conference will have various sessions devoted to contributed papers, invited talks, practical reports, panel discussions, tutorials and vendor exhibition.

Topics of interest include

- Parallel, distributed and networked computing
- High speed networks
- Web based computing
- Business computing
- Multimedia systems
- Parallel and distributed databases and data warehousing
- EDI and e-commerce
- High performance graphics, visualization and virtual reality
- Secure computing
- Mobile computing

About Bhubaneswar: <http://www.orissaindia.com>

Bhubaneswar, capital of the state of Orissa, is located in the eastern part of India. There are convenient air and surface transportation to Bhubaneswar. The areas round Bhubaneswar have several major attractions. The magnificent Sun Temple of Konark (known as Black Pagoda) is internationally renowned. Puri and Konark -- both within 30 miles of Bhubaneswar -- have beautiful beaches. Close to Bhubaneswar is Nandankanan Zoological Park, a botanical garden that includes the largest lion and tiger safari in India. The Udayagiri and Khandagiri hills at the outskirts of the city have a network of man-made caves dating from the fourth century B.C. Presently, Bhubaneswar offers a great promise to IT industries enthused by several liberalization policies of local government. Some nationally renowned IT industries have started operating from the city. It is the fastest growing city in the eastern regions of India.

About ACS:

Advanced Computing and Communications Society (ACS) is engaged in fostering awareness about recent developments in computing and communication

systems. ACS organizes technical seminars, workshops and conferences. For more information, please contact P.S. Nagendra Rao (Secretary), Dept. of Electrical Engg., Indian Institute of Science, Bangalore, nagendra@ee.iisc.ernet.in .

Advance Program
ADCOM 2001

December 16, 2001 (Sunday)

8:30 - 10:00 – **Workshop on Mobile Ad-hoc Networks**

Session W1

(Invited Talk / Technical Paper Presentation)

10:00 - 10:30 - Tea Break

10:30 - 12:00 – **Workshop on Mobile Ad-hoc Networks**

Session W2

(Invited Talk / Technical Paper Presentation)

12:00 - 13:30 - Lunch

13:30 - 15:00 - **Workshop on Mobile Ad-hoc Networks**

Session W3

(Invited Talk / Technical Paper Presentation)

15:00 - 15:30 - Tea Break

18:00 – 19:30 – **Inauguration of the Conference**

19:30 – 20:30 – High Tea

December 17, 2001 (Monday)

8:30 - 9:30 - **Keynote Speech 1**

Chair : S. Iyengar

Speaker : *J. Barhen*, Oak Ridge National Laboratory, USA

Topic : Optical Computing

9:30 - 10:00 - Tea Break

10:00 - 12:15 - **Technical Paper Sessions 1 and 2**

Session 1 : Architectures, Networks and Distributed Systems

Chair : Bharat Bhargava

Fault-tolerant Scheduling in Hypercube Multicomputer Systems

N.V. Satyanarayanan,

Rajib Mall and Ajit Pal

Routing of BPC Permutations in Optical MIN's with Minimum Number of Stages
Anjan Sarkar and Nabanita Das

Concurrent Checkpoint Initiation and Recovery Algorithms on an Asynchronous Unidirectional Ring Network
Partha S. Mandal and K. Mukhopadhyaya

On Design of Measurements for End-To-End Delay Minimization in Wide-Area Networks
Nageswara S. V. Rao

A Simulator for Distributed Self-Stabilizing Protocols
N. Gururaj and Arobinda Gupta

A differential Protection Scheme for Fault-tolerance in Qos Multicasting
Anirban Chakrabarti and M. Manimaran

RSVP-based Multicasting in the Presence of Best-Effort Services and Network Failure: Simulation Model and Performance Impact on Applications
Suresh B. Muppala, Wen-Jung Hsin and Deepankar Medhi

Session 2 : Algorithms

Chair : K. Mukhopadhyaya

A Genetic Algorithm for SDST Scheduling
D. Laha, M. Chakraborty and U.K. Chakraborty

An Incremental Algorithm For Maximum Flow Problem
Satish Kumar and Phalguni Gupta

Parallel Suffix Sorting
Natsuhiko Futamura, Srinivas Aluru, and Stefan Kurtz

Quickest Paths For Different Network Router Mechanisms
Nageswara S.V. Rao, William C. Grimmell, Sridhar Radhakrishnan and Young C. Bang

Practical Load Distribution Algorithms for Distributed Web Server Systems
Subbarao Bhagavati and Sushil K. Prasad

Generation of an Optimal Query Execution Plan in a Distributed Relational Database using a Randomized Algorithm
B. Vijayakumar and N. P. Gopalan

An Allocation Algorithm for Generalized Bids in Combinatorial Auctions
K. Balaji, Rajkishore Barik, Arun Kumar and Ashish Kundu

12:15 - 13:30 - Lunch

13:30 - 14:30 – **Keynote Speech 2**

Chair : L. M. Patnaik

Speaker : *R. L. Kashyap*, Purdue University, USA

Topic : Pattern Classification

14:30 - 15:30 - **Industry Track Session**

Chair : Anirban Basu

15:30 - 15:45 - Tea Break

15:45 - 17:30 - **Short Paper Sessions S1 and S2**

Session S1 : Architectures, Networks and Distributed Systems

Chair : Suresh Rai

Evaluating CORBA as a Cluster Middleware for Heterogeneous Cluster

Arvind W. Kiwelekar, and Pradeep K. Sinha

A Balanced Adaptive Routing Scheme For K-ary N-cube Network

R. S. Rajesh, and S. Arumugam

Optimization of Tree-Structured IIR/FIR Uniform-Band Filter Banks

Elizabeth Elias

New Strategies for Allocating Tasks in Real-Time Multiprocessor Systems

Mahesh C. Govil, Padam Kumar and Kuldip Singh

Visual Information Retrieval via a Bayesian Belief Network Framework

Campbell Wilson, Bala Srinivasan and Siddheswar Ray

Collective Load Sharing in Homogeneous Distributed Systems

Anuraag Sarangi, Alok Shriram and Avinash Shankar

Session S2 : Mobile Computing, Multimedia and Internet Applications

Chair : D. Saha

An Improved Adaptive Bandwidth Reservation Scheme for Multimedia Wireless Networks

Saurav Sinha, H. K Pati and Rajib Mall

A Context-Based Model for Programming Mobility.

L.E. Nugroho, S.W.Loke, B. Srinivasan, A.S.M. Sajeev and I.K. Ibrahim

Dimensioning and Optimization Strategies of GSM Control Channels

Bhishma Bhardwaj, Sanjay Thakur and Anuj Kumar

An Enhanced Differentiated Services for Internet

M Kiran Babu and Sukumar Nandi

MTP: A New Transport Protocol for Multimedia Internet Transactions

Seth Noble, K. Thulasiraman, Anindya Das and John Canning

D-MAC: Dynamic Media Access Control for the High Speed Wireless Ad Hoc
LANs

Zhijun Cai and Mi Lu

18:30 - 19:30 - **Cultural Function**

19:30 - 20:30 - **Banquet Dinner**

December 18, 2001 (Tuesday)

8:30 - 9:30 - **Keynote Speech 3**

Chair : L. Bhuyan

Speaker : *Srikumar*, DARPA, Defense Advanced Research Project
Agency, U.S.A.

Topic : Sensor Technology for the new Millennium.

9:30 - 10:00 - Tea Break

10:00 - 12:15 - **Technical Paper Sessions 3 and 4**

Session 3 : Web, Business, Mobile and Secure Computing

Chair : N. Das

A Dynamic Virtual-Time based CPU Scheduler for Guaranteeing QoS to
Multimedia Applications

Alok Nandan, Kausstubh S. Patil, Rajib Mall and Anupam Basu

A Service-Centric Multi-Agent Model

Manas R. Patra and Hrushikesh Mohanty,

Managing Disconnection of Mobile Hosts in Distributed Clustering

O. B. V. Ramanaiah and Hrushikesh Mohanty

Using Mobile Code to Improve Distribution Performance In Slow Wireless
Environments

Heikki Tienari, Saku Kaukonen and Jaakko Sauvola

A Location Counter Strategy For Fault Tolerance in a Wireless Mobile Environment
Yongho An

GF (2 p) Cellular Automata As A Message Digest Generator
Monalisa Mukherjee, Biplab K Sikdar, Niloy Ganguly and P Pal Chaudhuri

Cellular Automata Based Hamming Hash Family: Synthesis and Application
Niloy Ganguly, Biplab K Sikdar and P Pal Chaudhuri

Session 4 : Real-Time Applications, Image and Signal Processing

Chair : Sumeet Dua

Implementing 3-D Self-Organizing Map Based Color Quantization Process in FPGA
N. Sudha, T. Srikanthan and Babu Mailachalam

Application Centric Load Balancing Strategy Based on Prediction.
Hareesh S. Bhatt, Brajendra K. Singh and A.K. Aggarwal

Application Level marking: a novel scheme to provide QoS in differentiated services
N. Vidhya, Rajib Mall and Badrinath Ramamurthy

Adaptive Connection Management For ATM With Explicit Support For Real Time And Mission Critical Applications
Zoramthanga, Ranjan Pal and Rajib Mall

Devanagari Pen-written Character Recognition
Abhiram Ranade and Meghanad Ranade

A Novel Idea for Speech Recognition of Indian Languages
Amit K. Mishra

Quantization effects on tree-structured IIR/FIR octave-band filter banks
Elizabeth Elias

12:15 - 13:30 - Lunch

13:30 - 14:30 - **Keynote Speech 4**

Chair : R. N. Mahapatra

Speaker : *V. Varanasi*, University of South Florida.
Topic : Error Correcting Codes.

14:30 - 15:30 - **Panel Discussion**

Topic: Networking for the Next millennium.

Details: (TBA).

15:30 - 15:45 - Tea Break

15:45 - 17:30 - **Poster Session P1**

Chair : S. Kar

Congestion Control with Dynamic feedback Threshold in ATM Networks-
Fuzzy Approach.

Mohan Lal, S. C. Sharma and Brijesh K. Gupta

Image Restoration Using A Neural Detector And Wavelet Based Pre-Filter

G. Panda, B. Majhi, S. K. Meher, and P. K. Dash

WEBMAPS: The Development of a WWW-Based Tourist Information
System with Data Mining Capability.

K. Sridharan and M. Jagan Babu

Building a Large Data Warehouse for Citizen Facilitation.

Pradeep K. Sinha

On the performance of High-Bandwidth Applications over Bluetooth.

Aaditeshwar Seth, Anand Kashyap, and R.K. Ghosh

Case for Vertical Migration within the Secondary Storage layer for
increased I/O Performance.

Kameshwari .R. and K. Gopinath

Design of a Simple Bandwidth Management Algorithm for Voice
Packets over IP Network.

Arunkumar T. and Navaneethan P.

Mobile Agent Management in PMADE.

R.B. Patel and Kumkum Garg,

Current Trends In Evolutionary Computing Methods.

A. K. Swain, A. M. Panda, S. Pattanai and M. Nayak

Speech Enhancement Using a Soft-Decision Noise Suppression Filter.

M.S. Sutaone, P.P. Bartakke and A.M. Sapkal

18:00 - 19:00 – **ACS Meeting**

December 19, 2001 (Wednesday)

Tutorials

8:30 - 10:00 - **Tutorials 1 and 2**

Tutorial 1 :

Component Based Distributed Application Development Using Enterprise Java Beans.

Anup Kumar, University of Louisville, USA.

Tutorial 2 :

Fractals and Computer Graphics.

A. K. Bisoi and S. N. Mishra, Indira Gandhi Institute of Technology, Orissa.

10:00 - 10:30 - Tea Break

10:30 - 12:00 - **Tutorials 1 and 2**

12:00 - 13:30 – Lunch

13:30 - 15:00 - **Tutorials 3 and 4**

Tutorial 3 :

Mobile Database Technology.

Sanjay K. Madria, University of Missouri-Rolla, USA.

Tutorial 4 :

Content –Based Image Retrieval Systems: Architecture, Query Processing, and Indexing Issues.

B. Srinivasan, M.V. Ramakrishna, and S. Ray, Monash University, Australia

15:00 – 15:30 – Tea Break

15:30 – 17:00 – **Tutorials 3 and 4**
