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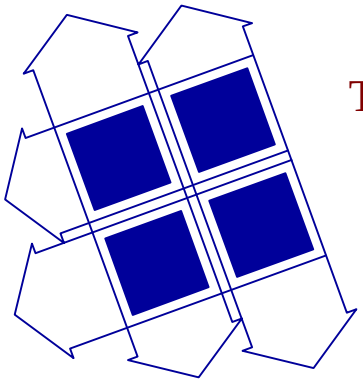


ICDCS 2001

The 21st International Conference on Distributed Computing Systems

Phoenix/Mesa, Arizona, USA, April 16-19, 2001
http://cactus.eas.asu.edu/ICDCS2001

Program at a Glance

Monday 16th	8:00-5:00	♦ Intl. Workshop on Multimedia Network Systems (Kachina A & B) ♦ Intl. Workshop Distributed Dynamic Multiservice Architectures (Fiesta) ♦ Intl. Workshop on Applied Reliable Group Communication (Pueblo B) ♦ Intl. Workshop on Wireless Networks and Mobile Computing (Pueblo A) ♦ Intl. Workshop on Smart Appliances and Wearable Computing (Kiva C)		
	6:00-8:00	**Conference Reception** (Kiva A&B)		
Tuesday 17th	8:30-9:00	**Opening Session** - Introduction and Awards (Kiva C)		
	9:00-10:00	**Keynote: Ken Birman, Cornell University and Reliable Network Solutions** **Title: Scalability: The Achilles Heel of an Increasingly Networked World** Just about everything is moving to the network and this is happening very rapidly. Network technologies will need to scale very smoothly to accommodate the likely loads and stresses of these emerging demands. How well do network applications scale, and what can we do about it?		
	10:30-12:00	1A: Distributed Algorithms	1B: Distributed Operating Systems - I	1C: Distributed Agent Systems
	1:30-3:00	2A: Stabilization Problems	2B: Load Sharing and Migration Methods	2C: Applications
	3:30-5:00	3A: Modeling and Simulation	3B: Network Management	3C: Real Time Systems
	6:00-8:00	**Conference Reception and Poster Session** (Kiva A&B)		
Wednesday, 18th	9:00-10:00	**Keynote: John A Stankovic, University of Virginia** (Kiva C) **Title: Distributed Systems Go Embedded**		
	10:30-12:00	4A: Fault Tolerant Issues – I	4B: Multicast and Anycast	4C: Distributed Programming Model
	1:30-3:00	5A: Fault Tolerant Issues – II	5B: Object Oriented Systems	5C: Security Issues
	3:30-5:00	6A: Distributed Databases	6B: Distributed Operating Systems - II	6C: Mobile Computing and Communication
	7:00-9:00	**Conference Banquet** (Kiva)		
Thursday, 19th	8:30-9:30	**Keynote: Urs Hölzle, Google Inc.** (Kiva C) **Title: Google – Linux Clustering for Fun and Profit** Google currently processes over 70 million queries per day over a multi-terabyte web index, with a response time of below half a second. This talk presents a technical overview of what makes this performance possible.		
	10:00-11:30	7A: Mobility Theory and Practice	7B: Network Protocols	7C: Distributed Software Engineering
	1:00-2:30	8A: Resource Management	8B: Middleware	8C: Internet Technology
	2:30-4:00	**Panel (with refreshments):** **Title: Open Source Software: Is it More or Less Secure?** **Moderator: Douglas Maughan, DARPA** Peter Neumann, SRI International Lee Badger, NAI Labs Carl Landwehr, Mitretek Steve Lipner, Microsoft Gary McGraw, Cigital	The development of software using an open-source model of software validation and distribution continues to gain popularity worldwide. This panel of experts will explore the issues of whether this model is appropriate for ensuring the quality and assurance of software and how the open-source model impacts the assurance of software for critical systems, both commercial and military.	

ICDCS 2001

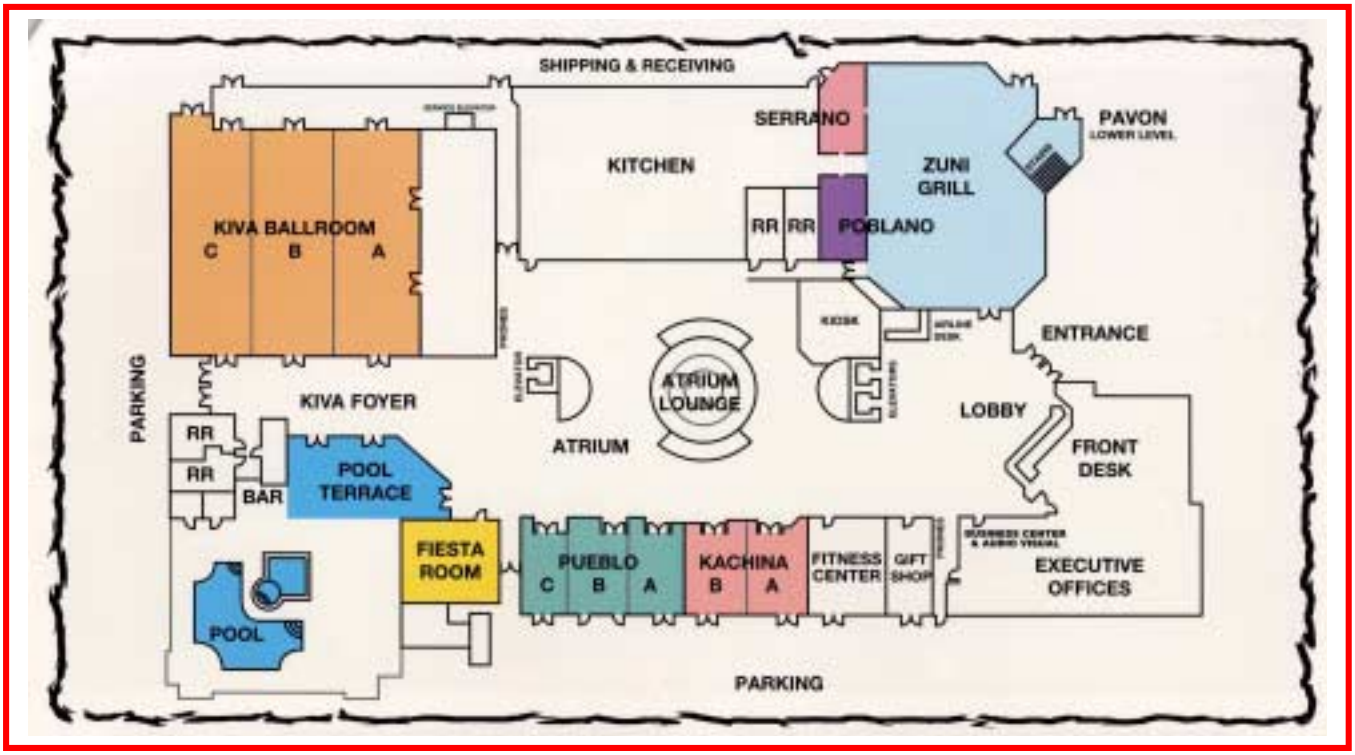
The 21st International Conference on

Distributed Computing Systems

Event Locator

Registration	Kiva Foyer
Internet Access	Poblano
Reception, Mon. and Tue. 6-8pm	Kiva A & B
Poster Session, Tue	Kiva A & B
Banquet Wed 7-9pm	Kiva A, B & C
Continental Breakfast everyday, 7:30-8:30am	South Atrium
Author Breakfast	Pueblo C
Breaks	South Atrium
Author Room	Pueblo C

MNS Workshop, Track 1	Kachina A
MNS Workshop, Track 2	Kachina B
DDMA Workshop	Fiesta
WARGC Workshop	Pueblo B
WNMC Workshop	Pueblo A
WSAWC Workshop	Kiva C
Keynote Speeches	Kiva C
Tech. Sessions 1-8 A	Fiesta
Tech. Sessions 1-8 B	Kachina A & B
Tech. Sessions 1-8 C	Pueblo A & B
Panel (Thu)	Kachina A & B



Monday 16th Monday 16th Monday 16th Monday 16th Monday 16th

International Workshop on Multimedia Network Systems (MNS2001)

	TRACK 1 (Kachina A)	TRACK 2 (Kachina B)
8:30-10:00	**Broadbandand Wirelesss Computing (1)** **Chair: Jiung-Yao Huang, Tamkang University, Taiwan.** • *Application of Fuzzy Logic for Estimation of Equivalent Capacity in High-Speed Networks*, Leonard Barolli, Akio Koyama, Takako Yamada, Shoichi Yokoyama, Norio Shiratori, Japan. • *Efficient Changes and Variability Bandwidth Allocation for VBR Media Streams* ,Han-Chieh Chao, C. L. Hung, and Y. C. Chang, Taiwan, R.O.C. • *An Implementation of Ping-Pong Flow Control in ATM,* Lain-Chyr Hwang, C. Y. Ku, S. C. Liu, and H. T. Wu, Taiwan, R.O.C.	**Distance Learning Presentations (1)** **Chair: Timothy K. Shih, Tamkang University Taiwan** • PLL: *A Programming Languages Lab System* , Yuh-Huei Shyu, Peng-Wen Chen, Taiwan, R.O.C. • *Toward Better Assessments in Distance Education*, Isaac Yihjia Tsai, Taiwan, R.O.C. • *Design of SQ3R-based Support Method for Course Contents Provision in Distance Learning Systems*, Guozehen Zhang, Ken'ichi Saitou, Zixue Cheng, Akio Koyama, Aiguo He, Tong jun Huang, Japan
10:00-10:30	**Break**	
10:30-11:30	**Broad Band and Wireless Network computing (2)** **Chair: Ying-Hong Wang, Tamkang University, Taiwan.** • *Experimental Evalutation of Error Control for Video Multicast over Wireless LANs,* Peng Ge, Philip K. McKinley, U.S.A. • *Adaptive Resource Allocation for Multimedia Services on Wireless Communication Network,* Lei Huang, Sunil Kumar, C.-C. Jay Kuo, U.S.A.	**Distance Learning Presentations (2)** **Chair: Teh-Sheng Huang,Chung-Hwa Telecommunication Company, Taiwan** • *Bringing Affective Behaviour To Presentaion Agents*, Sylvain Descamps, Japan. • *Using the Floor Control Mechanism in Distributed Multimedia Presentation System,* Huan-Chao Keh, Timothy K. Shih, Lawrence Y. Deng, I-Chun Liao, and Rong-Chi Chang, Taiwan, R.O.C.
11:30-13:30	**Lunch**	
13:30-15:00	**Distributed Systems (1)** **Chair: Philip K. McKinley, Michigan State University, U.S.A.** • *Distributed Information Retrieval by using Cooperative Meta Search Engines*, Nobuyoshi Sato, Minoru Uehara, Yoshifumi Sakai, Hideki Mori, Japan • *Quality-Based Approach to Locking Multimedia Objects*, Naokazu Nemoto, Katsuya Tanaka, Makoto Takizawa, Japan • *Group Communication of Multimedia Objects*, Kenichi Shimamura, Katsuya Tanaka, Makoto Takizawa, Japan	**Virtual Reality and Image Processing (1)** **Chair: Jiung-Yoo Huang, Tamkang University, Taiwan** • *Muteness-Based Audio Watermarking Technique*, Khalid Kaabneh & Dr. Abdou Youssef, U.S.A. • *Interactive 3D Presentation System of Japanese Traditional Crafting over Japanese Gigabit Network (JGN)*, Akihiro Miyakawa, Kaoru Sugita, Koji Hashimoto, Yoshitaka Shibata,Japan • *An Efficient Method for Computing the Feasible Region with Translational Containment between two Convex Polygons*, Y. Chen, Shuo-Yan Chou, and T. Wu, Taiwan, R.O.C.
15:00-15:30	**Break**	
15:30-16:30	**Distributed Systems (2)** **Chair: Leonard Barolli, Yamagata University, Japan** • *The Performance of AF Service in Multi-DS Domain Networks*, Tingzhou Yang, Taiwan, R.O.C. • *Using Threading and Factory Models to Improve the Performance of Distributed Object Computing System*, Chia-Chen Lee, Teh-Sheng Huang, Wen-Chen Sheu, Jang-Fong Tsai, Hong-Jang Wu, Taiwan, R.O.C.	**Virtual Reality and Image Processing (2)** **Chair Minoru Uehara,Toyo Univesity, Japan** • *Image Indexing and Similarity Retrieval Based on a New Spatial Relation Model*,Ying-Hong Wang, Taiwan, R.O.C. • *Experience of Building A High-Fidelity Mobile Crane Simulator with Cluster of Desktop Computers*, Jiung-Yao Huang, Taiwan, R.O.C.

International Workshop on Distributed Dynamic Multiservice Architectures (DDMA) (Fiesta)

8:30-8:45	**Welcome**
8:45- 9:30	**Keynote Speech** • *Requirements, Methods and Techniques for Designing Distributed Multiservice Architectures*, Mehmet Aksit, University of Twente, Netherlands
9:30-10:10	**Session 1 Applications of Multiservice Architectures** • *·DynaArchitectural Issues for Cross-Organizational B2B Interactions*, Karsten Schulz and Maria E. Orlowska,The University of Queensland, Australia. • *Dynamic e-service Composition in Dysco*, G. Piccinelli and L. Mokrushin, HP United Kingdom and Saint-Petersburg State Technical university, Russia.
10:10-10:30	**Break**
10:30-11:10	**Session 2 Concerns** • *Collaborative Virtual Environment Development: An Aspect-Oriented Approach, M. Pinto*, M. Amor, L. Fuentes and J.M. Troya, Universidad de Malaga, Spain, • *Separating Replication from Distributed Communication: Problems and Solutions*, M. Antunes, H. Miranda, A. Rito Silva, L. Rodrigues and J. Martins,Technical University of Lisbon and University of Lisbon, Portugal
11:10-11:50	**Session 3 Quality Concerns, monitoring and control** • *Client Side Reconfiguration on Software Components for Load Balancing*, E. Putryez and G. Bernard,Institut National des Telecommunications, France • *Quality of Service and O.O. Oriented Middleware Multiple Concerns and their Separation*, Christian Becker, University of Frankfurt, Germany
11:50-12:30	**Session 4 Discussions : What are the concerns? What are the issues in modeling them?**
12:30-1:30	**Lunch**
13:30-14:10	**Session 5 Composition technology : Agents and Frameworks** • *An Architecture-Based Approach Substantiating The Aspect Of Interagent Connection In Platforms*, Mario Kupries and Erika Horn,University of Petroleum, Saudi Arabia and University of Potsdam, Germany • *Composing Concerns with a Framework Approach*, Constantinos A. Constantinides and Tzilla Elrad,Loyola University and Illinois Institute of Technology, Chicago, USA
14:10-14:50	**Session 6 Composition technology : Dynamic Architectures** • *Redirecting by Injector,* Robert E. Filman and Diana D. Lee,NASA, USA • *Dynamic Customization Model for Distributed Component-Based Systems,* E Truyen, B Vanhaute, W Joosen, P Verbaeten, B Norregaard Jorgensen K.U. Leuven, Belgium and University of Southern Denmark
14:50 - 15:30	**Session 7 Discussions: Which Technology**?
15:30 - 16:0	**Break**
16:00 - 16:40	**Session 8 Specification and Modeling** • *A Specification Logic for Dynamic Composition of Services, S. Laemmermann and E. Tyugu*, University of Kista, Sweden • *A Generic and Implementation Independent Service Description Model* Peter Sties, Wolfgang Kellerer, Munich University of Technology

Monday 16th Monday 16th Monday 16th Monday 16th Monday 16th

	International Workshop on Applied Reliable Group Comm-unication (WARGC) (Pueblo B)	International Workshop on Wireless Networks and Mobile Computing (WNMC 2001) (Pueblo A)	International Workshop on Smart Appliances and Wearable Computing (IWSAWC) (Kiva C)
8:30 - 10:00	**Session 1. Services.** **Chair: Katsuya Tanaka.** • *An Example of Real-Time Group Communication System*,C. Delporte-Gallet and H. Fauconnie • *Application Ordering in Group Communication*, G. Singh and S. Badarpura. • *The Architecture of a Secure Group Communication System based on Intrusion Tolerance*, M. Correia, P. Verissimo and N. Neves	**Session 1. Wireless Ad Hoc Networks** **Chair: Timothy K. Shih, TamKang University** • *A Mobility Based Metric for* Clustering in Mobile Ad Hoc Networks, Prithwish Basu, Naved Khan, Thomas D.C. Little • *A Multi-Channel MAC Protocol with Power Control for Multi-Hop Mobile Ad Hoc Networks*,Y.-C. Tseng, S.-L. Wu, C.-Y. Lin, J.-P. Sheu • *Performance of Route Caching Strategies in Dynamic Source Routing*, Mahesh K. Marina, Samir R. Das	**Session 1 Home Networks and Applications** **Chair: Yoshito Tobe** • *Gateway Technologies for Home Network and Their Implementations*, Takeshi Saito, Ichiro Tomoda, Yoshiaki Takabatake, Keiichi Teramoto, and Kensaku Fujimoto, Toshiba, Japan • *Collaborative Media Streaming in an In-Home Network*, Verena Kahmann and Lars Wolf, University of Karlsrule, Germany • *Adaptive Rental Resource System for Home-Area Network,* Hideaki Okamura, Sony Computer Science Laboratories, Japan
10:00-10:30	Coffee Break		
10:30-12:30	**Session 2. Algorithms.** **Chair: Matti Hiltunen** • *Reliable Group Communication with Subgroups,* K. Jenkins, K. Hopkinson and K. Birman. • *Providing Efficient, Robust Error Recovery Through Randomization*, Z. Xiao and K. Birman. • *Protocol Switching: Exploiting Meta-Properties,X. Liu, R. van Renesse*, M. Bickford, C. Kreitz and R. Constable. • *Logarithmic Harary Graphs*, K. Jenkins and A. Demers.	**Session 2. Next-Generation Wireless Systems** **Chair: Sandeep Gupta, Arizona State University** • *vGPRS: GA Mechanism for Voice over GPRS*, Yi-Bing Lin, Ai-Chun Pang, Ming-Feng Chang • *Dynamic Scheduling Framework on RLC/MAC layer for General Packet Radio Service*, Jen-Shun Yang, Chien-Chao Tseng, Ray-Guang Cheng • *Agents and Mobile Handsets*, Michael Mahan	**Session 2 Framework for Smart Appliances** **Chair: Mike Little** • *Centaurus: A Framework for Intelligent Services in a Mobile Environment*, Lalana Kagal, Vlad Korolev, Harry Chen, Anupan Joshi, and Timothy Finin, University of Maryland, Baltimore, USA • *A Mobile Agent Framework for Follow-Me Applications in Ubiquitous Computing Environment*, Kazunori Takashio, Gakuya Soeda, and Hideyuki Tokuda, University of Electro-Communications, Japan • *Sm@rtLibrary - An Infrastructure for Ubiquitous Technologies and Applications*, Marie-Luise Moschgath, Joerg Haehner, and Rolf Reinema, ETH Zuerich, Switzerland • *A Location-Adaptive Virtual Networked Appliance,* Akihiko Kusumoto, Jin Nakazawa, Yoshito Tobe, and Hideyuki Tokuda, Keio University, Japan
12:30-13:30	Lunch		
13:30 - 15:30	**Session 3. Applications.** **Chair: Shivakant Mishra** • *Network Fault-Management Based on SNMP Agent Groups*, E. Duarte and A. Santos. • *A General Framework for Highly Available Services Based on Group Communication*, A. Fekete and I. Keidar. • *A Light-Weight Repair Protocol for the Loss-Free Recording of MBone Sessions*, V. Hilt, M. Mauve and W. Effelsberg. • *Jgroup: Enhancing Jini with Group Communication,* A. Montresor, R. Davoli and O. Babaoglu.	**Session 3. Mobile Protocols** **Chair: Jie Wu, Florida Atlantic University** • *Improving The Performance Of Wireless LAN Using A New Scheduling Algorithm*, Wu Si, Ding Quanlong, Ko Chi Chung • *Internal Nodes and Shortcut Based Routing with Guaranteed Delivery in Wireless Networks*, Susanta Datta, Ivan Stojmenovic, Jie Wu • *HMRSVP: A Hierarchical Mobile RSVP Protocol*, Chien-Chao Tseng, Gwo-Chuan Lee, Ren-Shiou Liu • *An End-End Approach to Wireless Web Access*, Vladimir Korolev, Anupam Joshi • *Checkpoint-Recovery for Mobile Computing System*, Yoshinori Morita, Hiroaki Higaki	**Session 3 Computing and Communications for Smart Appliances** **Chair: Stephen Pink** • *An eXtensible Service Protocol for Adaptive Personal Mobile Communication*, Theo Kanter, Ericsson, Sweden • *A User Interface System for Home Appliaces with Virtual Network Computing*, Tatsuo Nakajima and Atsushi Hasegawa, Waseda University, Japan • *Predictive Scheme for Proximate Interactions,* Arnaud Troël, Michel Michel Banâtre, Paul Couderc, and Frédéric Weis, IRISA, France • *Communication Primitives for Ubiquitous Systems or RPC Considered Harmful*, Umar Saif and David J. Greaves, University of Cambridge, UK • *A Survey of Adaptive Applications in Mobile Computing*, Adnan Al-bar and Ian Wakeman, University of Sussex, UK
15:30 - 16:00	Break		
16:00-18:00	**Session 4. Panel:** **Experience with Reliable Group Communication.** **Chair: Yair Amir** Christof Fetzer, AT&T research. Alberto Montresor, University of Bologna. Priya Narasimhan, Eternal Systems. Robbert van Renesse, Cornell University. Jonathan Stanton, Johns Hopkins University.	**Session 4. Mobility Systems and Computing** **Chair: Darrell Long, UC Santa Cruz** • *SCARAB: Innovative Services Supporting User and Terminal Mobility,* Luigi Ciminiera, Paolo Maggi, Riccardo Sisto • *Design of Composable Proxy Filters for Mobile Computing,* Philip K. McKinley, Udiyan I. Padmanabhan • *Dynamic Relationships and Noah: The Persistence of Pairings*, Ahmed Amer, Darrel D. E. Long • *Low-cost Fault-tolerance for Mobile Nodes in Mobile IP Based Systems*, J. Ahn and C. Hwang	**Session 4 Wearable Computing** **Chair: Kazunori Takashio** • *LART: Flexible, Low-Power Building Blocks for Wearable Computers*, Jan-Derk Bakker, Koen Langendoen, and Henk Sips, Delft University of Technology, the Netherlands • *Towards Forming Communities with Wearable Musical Instruments*, Yukio Tada, Kazushi Nishimoto, Tadao Maekawa, Romain Rouve, Kenji Mase, and Ryohei Nakatsu, ATR, Japan • *Wearable Security Services*, Jalal Al-Muhtadi, Roy Campbell, and Dennis Mickunas, University of Illinois at Urbana-Champaign, USA • *A XML Based Multimedia Data Acquisition and Retrieval with Wearable Computers*, Yoshihiro Ohmori, Kazushige Ouchi, Masakazu Hattori, and Miwako Doi, Toshiba, Japan

Tuesday 17th

8:30-9:00	**Opening Session** (Introduction and Awards) (Kiva C)		
9:00-10:00	**Keynote: Ken Birman, Cornell University and Reliable Network Solutions** (Kiva C) **Title: SCALABILITY: THE ACHILLES HEEL OF AN INCREASINGLY NETWORKED WORLD.** Just about everything is moving to the network and this is happening very rapidly. Network technologies will need to scale very smoothly to accommodate the likely loads and stresses of these emerging demands. How well do network applications scale, and what can we do about it?		
10:00-10:30	**Break**		
10:30-12:00	**1A: Distributed Algorithms** (Fiesta) **Session Chair: Michel Raynal, IRISA, France** • *On Detecting Global Predicates in Distributed Computations*, N. Mittal and V. Garg, University of Texas, Austin, USA. • *Backoff Protocols for Distributed Mutual Exclusion and Ordering*, G. Chockler, D. Malkhi, Hebrew University of Jerusalem, Israel, and M. Reiter, Lucent Bell Laboratories, USA. • *Applications of Probabilistic Quorums to Iterative Algorithms,* H. Lee and J. Welch, Texas A&M University, College Station, USA.	**1B: Distributed Operating Systems – I** (Kachina A&B) **Session Chair: Vijay Karamcheti, NYU, New York, USA** • *MVSS: Multi-view Storage System,* X. Ma and A. Reddy, Texas A&M University, College Station, USA. • *Selective Checkpointing and Rollbacks in Multithreaded Distributed Systems,* M. Kasbekar and C. Das, Pennsylvania State University, University Park, USA. • *Efficient Generalized Deadlock Detection and Resolution in Distributed Systems,* S. Lee, Inchon National University of Education, Inchon, Korea.	**1C: Distributed Agent Systems** (Pueblo A&B) **Session Chair: Shivakant Mishra, University of Colorado, Boulder, USA** • *A Framework for Modeling Agent-Oriented Software,* H. Xu and S. Shatz, University of Illinois, Chicago, USA. • *Cost Effective Mobile Agent Planning for Distributed Information Retrieva,l* J.-W. Baek, J.-H. Yeo, G.-T. Kim, and H.-Y. Yeom, Seoul National University, Korea. • *Mobile Transactional Agents*, R. Sher, Technion, Haifa, Israel, Y. Aridor, and O. Etzion, IBM Research, Haifa, Israel.
12:00-1:00	**Lunch on your own**		
1:30-3:00	**2A: Stabilization Problems** (Fiesta) **Session Chair: Ajay Kshemkalyani, U. of Illinois, Chicago, USA** • *Tight Space Self-Stabilizing Uniform l-Mutual Exclusion*, M. Gradinariu and S. Tixeuil, Universite de Paris Sud, Orsay Cedex, France. • *Self-Stabilizing PIF Algorithm in Arbitrary Rooted Net*works, A. Cournier, Université de Picardie Jules Verne, France, A. Datta, University of Nevada, Las Vegas, USA, F. Petit, and V. Villain, Université de Picardie Jules Verne, France. • *Unifying Stabilization and Termination in Message-Passing Systems*, A. Arora, Ohio State University, Columbus, USA, and M. Nesterenko, Kent State University, Kent, USA.	**2B: Load Sharing and Migration Methods** (Kachina A&B) **Session Chair: Christoph Steigner, Universitat Koblenz, Germany** • *Dynamic Load Sharing with Unknown Memory Demands in Clusters,* S. Chen, L. Xiao, and X. Zhang, College of William and Mary, Williamsburg, USA. • *Dynamic Migration Algorithms for Distributed Object Systems*, V. Kalogeraki, P. Melliar-Smith, and L. Moser, University of California, Santa Barbara, USA. • *The Home Model and Competitive Algorithms for Load Balancing in a Computing Cluster*, R. Lavi and A. Barak, Hebrew University, Jerusalem, Israel.	**2C: Applications** (Pueblo A&B) **Session Chair: Luis E. T. Rodrigues, Universidade de Lisboa, Portugal** • *Robust Double Auction Protocol against False-Name Bids*, M. Yokoo, Y. Sakurai, and S. Matsubara, NTT Communication Science Laboratories, Kyoto, Japan. • *An Analytical Study of Opportunistic Lease Renewal*, R. Burns, R. Rees, IBM Almaden, USA, and D. Long, University of California, Santa Cruz, USA. • *Design and Evaluation of Redistribution Strategies for Wide-Area Commodity Distribution*, U. Çetintemel, University of Maryland, USA, B. Özden, Lucent Bell Laboratories, USA, M. Franklin, University of California, Berkeley, USA, and A. Silberschatz, Lucent Bell Labs, USA.
3:00-3:30	**Break**		
3:30-5:00	**3A: Modeling and Simulation** (Fiesta) **Session Chair: Philip McKinley, Michigan State University, East Lansing, USA** • *An Application-Oriented Approach for Distributed System Modeling and Simulation,* M. Nikolaidou, Universtiy of Athens, Greece, and D. Anagnostopoulos, Harokopian University of Athens, Greece. • *Performance Tuning of Distributed Applications with CoSMoS,* C. Steigner and J. Wilke, Univ. of Koblenz-Landau, Germany. • *Distributed Network Simulations Using the Dynamic Simulation Backplane,* G. Riley, M. Ammar, R. Fujimoto, D. Xu, and K. Perumalla, Georgia Institute of Technology, Atlanta, USA.	**3B: Network Management** (Kachina A&B) **Session Chair: H. J. Siegel, Purdue University, West Lafayette, USA** • *Optimal Hash Routing for Web Proxies,* X. Tang and S. Chanson, Hong Kong University of Science and Technology, Hong Kong, China. • *Robust TCP Congestion Recovery,* H. Wang and K. Shin, University of Michigan, Ann Arbor, USA. • *An Application of Parameter Estimation to Route Discovery by On-Demand Routing Protocols,* J. Sucec and I. Marsic, Rutgers University, New Brunswick, USA.	**3C: Real Time Systems** (Pueblo A&B) **Session Chair: Chita Das, Pennsylvania State University, University Park, USA** • *Multiprocessor Preprocessing Algorithms for Uniprocessor On-Line Scheduling,* J. Goossens, Universite Libre de Bruxelles, Belgium, and S. Baruah, University of North Carolina, Chapel Hill, USA • *Endpoint Admission Control: Network Based Approach,* B. Choi and R. Bettati, Texas A&M University, College Station, USA. • *A Real-Time System for Tele-Surgery,* S. Butner, University of California, Santa Barbara, USA and M. Ghodoussi, Computer Motion, Goleta, USA.
6:00-8:00	**Conference Reception and Poster Session, Session Chair, Rida Bazzi, Arizona State University, Tempe, USA** • *Dynamic Database Management for PCS Networks,* J. Li, University of Tsukuba, Japan and Y. Pan, Georgia State University, Atlanta, USA. • *Optimal Placement of Read-Write Web Proxies in the Internet,* X. Jia, D. Li, X. Hu, City University of Hong Kong, China, and D. Du, University of Minnesota, Minneapolis, USA. • *Token Based Group Mutual Exclusion for Asynchronous Rings,* S. Cantarell, Université de Paris-Sud, France, A. Datta, University of Nevada, Las Vegas, USA, F. Petit, and V. Villain, Université de Picardie Jules Verne, France. • *Fault-Tolerant Static Scheduling for Real-Time Distributed Embedded Systems*, A. Girault, INRIA-BIP, France, C. Lavarenne, INRIA-SOSSO, France, M. Sighireanu, University of Paris, France, and Y. Sorel, INRIA-SOSSO, France. • *Adaptive Protocols for Agent Migration*, I. Satoh, Japan Science and technology Corporation, Japan	• *Interagent Communication and Synchronization in DaAgent,* S. Mishra, University of Colorado, Boulder, USA and P. Xie, University of Wyoming, Laramie, USA. • *A Lattice Based Framework for Distributed Shared Memory Consistency Models,* R. Steinke and G. Nutt, University of Colorado, Boulder, USA. • *Appia: A Flexible Protocol Kernel Supporting Multiple Coordinated Channels,* H. Miranda, A. Pinto, and L. Rodrigues, Universidade de Lisboa, Portugal. • *A Protocol Design of Communication State Transfer for Distributed Computing*, K. Chanchio and X.-H. Sun, Illinois Institute of Technology, Chicago, USA. • *Pushing the Limits Of Multicast in Ad Hoc Networks,* K. Obraczka, G. Tsudik, and K. Viswanath, USC, Los Angeles, USA.	• *An Exercise in Proving Self-Stabilization through Ljapunov Functions,* O. Theel, Darmstadt University of Technology, Darmstadt, Germany. • *A Command and Control Support System Using CORBA,* J. Rodrigues Nt., V. Ulm de G. Lima, G. Lima, M. Ferreira, J. Alves de Almeida, CASNAV - Brazilian Navy, Brasil, S. de Oliveira e Cruz, R. Cerqueira, and C. Martins, Pontificia Universida de Catolica, Brasil. • *Open Metadata Formats: Efficient XML-Based Communication for Heterogeneous Distributed Systems,* P. Widener, K. Schwan, and G. Eisenhauer, Georgia Institute of Technology, Atlanta, USA. • *A Secure Access Control Mechanism against Internet Crackers,* K. Kourai, University of Tokyo, Japan, and S. Chiba, University of Tsukuba, Ibaraki, Japan. • *Towards Communication-Sensitive Load Balancing,* J. Cruz and K. Park, Purdue University, West Lafayette, USA. • *Maximizing Speedup through Performance Prediction for Distributed Shared Memory Systems,* Y.-C. Zhuang, C.-K. Shieh, and C.-H. Chou, National Cheng Kung University, Taiwan.

Wednesday 18th	9:00-10:00	**Keynote: John A. Stankovic, University of Virginia** (Kiva C) **Title: DISTRIBUTED SYSTEMS GO EMBEDDED**		
Wednesday 18th	10:00-10:30	**Break**		
Wednesday 18th	10:30-12:00	**4A: Fault Tolerant Issues I** (Fiesta) **Session Chair: Yair Amir, John Hopkins University, Baltimore, USA.** • *Availability Study of Dynamic Voting Algorithms*, K. Ingols and I. Keidar, Massachusetts Institute of Technology, Cambridge, USA. • *Modular Composition of Redundancy Management Protocols in Distributed Systems: An Outlook on Simplifying Protocol Level Formal Specification & Verification*, P. Sinha, Concordia University, Montreal, Canada, and N. Suri, Chalmers University, Goteborg, Sweden. • *Revisiting Hierarchical Quorum Systems*, N. Preguiça and J. Martins, Universidade Nova de Lisboa, Portugal.	**4B: Multicast and Anycast** (Kachina A&B) **Session Chair: Jie Wu, Florida Atlantic University, Boca Raton, USA.** • *Anonymous Gossip: Improving Multicast Reliability in Mobile Ad-Hoc Networks,* R. Chandra, V. Ramasubramanian, and K. Birman, Cornell University, Ithaca, USA. • *Transactions on Partially Replicated Data Based on Reliable and Atomic Multicasts*, U. Fritzke, Jr. and P. Ingels, IRISA, Rennes Cedex, France. • *Distributed Admission Control for Anycast Flows with QoS Requirements*, D. Xuan, Texas A&M University, College Station, USA and W. Jia, City University of Hong Kong, China.	**4C: Distributed Programming Model** (Pueblo A&B) **Session Chair: Ron Olsson, University of California, Davis, USA**. • *IMAGE: A Distributed Programming Model*, E. Barr, R. Pandey, and M. Haungs, University of California, Davis, USA. • *A Multi-threading Model for Distributed Mobile Objects and Its Realization in FarGo*, M. Abu and I. Ben-Shaul, Technion, Haifa, Israel. • *On Slicing a Distributed Computation*, V. Garg and N. Mittal, University of Texas, Austin, USA.
Wednesday 18th	12:00-1:30	**Lunch on your own**		
Wednesday 18th	1:30-3:00	**5A: Fault Tolerant Issues II** (Fiesta) **Session Chair: Anish Arora, Ohio State University, Columbus, USA.** • *Optimistic Active Replication*, P. Felber, Lucent Bell Laboratories, USA and A. Schiper, Ecole Polytechnique Fédérale de Lausanne, Switzerland. • *On the Minimal Characterization of the Rollback-Dependency Trackability Property*, I. Garcia and L. Buzato, Universidade Estadual de Campinas, São Paulo, Brasil.. • *Enforcing Perfect Failure Detection*, C. Fetzer, AT&T Labs Research, Florham Park, USA.	**5B: Object Oriented Systems** (Kachina A&B) **Session Chair: Dave Bakken,Washington State University, Pullman, USA.** • *A Fully Automated Object Extraction System for the World Wide Web,* D. Buttler, L. Liu, and C. Pu, Georgia Institute of Technology, Atlanta, USA. • *Maintaining Mutual Consistency for Cached Web Objects*, B. Urgaonkar, A. Ninan, M. Raunak, P. Shenoy, and K. Ramamritham, University of Massachusetts, Amherst, USA. • *Object Distribution with Local Information*, B. Silaghi and P. Keleher, University of Maryland, College Park, USA.	**5C:Security** (Pueblo A&B) **Session Chair: Clifford Neuman, University of Southern California, Los Angeles, USA.** • *Generalized Role-Based Access Control*, S. Chen, M. Moyer and M. Ahamad, Georgia Institute of Technology, Atlanta, USA. • *Exploring Robustness in Group Key Agreement*, Y. Amir, Johns Hopkins University, Baltimore, USA, Y. Kim, Univ. of Southern California, Marina Del Ray, USA, C. Nita-Rotaru, J. Schultz, J. Stanton, Johns Hopkins University, Baltimore, USA, and G. Tsudik, University of California, Irvine, USA. • *RAD: A Compile-Time Solution to Buffer Overflow Attacks*, Tzi-cker Chiueh, Fu-Hau Hsu, State University of New York, Stony Brook, USA.
Wednesday 18th	3:00-3:30	**Break**		
Wednesday 18th	3:30-5:00	**6A: Distributed Databases** (Fiesta) **Session Chair: Joe Loyall, BBN Technologies, USA** • *On-Line Realignment of Clients in Networked Databases*, J.-H. Park and A. Delis, Polytechnic University, Brooklyn, USA. • *Combining Generality and Practicality in a Conit-Based Continuous Consistency Model for Wide-Area Replication*, H. Yu and A. Vahdat, Duke University, Durham, USA. • *Distributed Query Processing in the Internet: Exploring Relation Replication and Network Characteristics,* C.-H. Lee and M.-S. Chen, National Taiwan University, Taipei, Taiwan.	**6B: Distributed Operating Systems II** (Kachina A&B) **Session Chair: Mukesh Singhal, Ohio State University, Columbus, USA** • *Fast Reconciliations in Fluid Replication,* L. Cox and B. Noble, University of Michigan, Ann Arbor, USA. • *Random, Ephemeral Transaction Identifiers in Dynamic Sensor Networks*, J. Elson and D. Estrin, University of California, Los Angeles and USC-ISI, USA. • *Adaptive Parameter Collection in Dynamic Distributed Environments*, Z. Fu and N. Venkatasubramanian, University of California, Irvine, USA.	**6C: Mobile Computing and Communication** (Pueblo A&B) **Session Chair: Ann Murphy, University of Rochester, Rochester, USA** • *Adaptive Approaches to Relieving Broadcast Storms in a Wireless Multihop Mobile Ad Hoc Network,* Y.-C. Tseng, National Chiao-Tung University, Hsin-Chu, Taiwan, S.-Y. Ni, and E.-Y. Shih, National Central University, Chung-Li, Taiwan • *Adaptive Beacon Placement*, N. Bulusu, Univ. of California, Los Angeles and USC-ISI, USA, J. Heidemann University of Southern California, USA, and D. Estrin, Univ. of California, Los Angeles and USC-ISI, USA. • *A Transparent Network Handover for Nomadic CORBA Users,* R. Ruggaber and J. Seitz, University of Karlsruhe, Germany.
	6:00-8:00	**Conference Banquet**		

Thursday 19th Thursday 19th Thursday 19th Thursday 19th Thursday 19th

8:30-9:30

Keynote: Urs Hölzle, Google Inc. (Kiva C)

Title: GOOGLE – LINUX CLUSTERING FOR FUN AND PROFIT.

Google currently processes seventy million queries per day for google.com and its licensees. Despite having to search a multi-terabyte web index for every query, Google's average response times are below half a second. In this talk I'll give you a technical overview of the software and hardware infrastructure, that makes this performance possible.

9:30-10:00 — **Break**

10:00-11:30

7A: Mobility Theory and Practice (Fiesta)
Session Chair: Ravi Prakash, University of Texas, Dallas, USA

- *Support for Speculative Update Propagation and Mobility in Deno*, U. Çetintemel, P. Keleher, University of Maryland, College Park, USA and M. Franklin, University of California Berkeley, USA.
- *A Traveling Salesman Mobility Model and Its Location Tracking in PCS Networks*, M.-H. Yang, L.-W. Chen, National Central University, Cheung-Li, Taiwan, Y.-C. Tseng National Chiao-Tung University, Hsin-Chu, Taiwan, and J.-P. Sheu, National Central University, Cheung-Li, Taiwan.
- *Lime: A Middleware for Physical and Logical Mobility*, A. Murphy, University of Rochester, USA, G. Picco, Plitechnico di Milano, Italy, and G.-C. Roman, Washington University, St. Louis, USA.

7B: Network Protocols (Kachina A&B)
Session Chair: Xian-He Sun, Illinois Institute of Technology, Chicago, USA

- *OSU-MAC: A New, Real-Time Medium Access Control Protocol for Wireless WANs with Asymmetric Wireless Links*,C. Liu, Y. Ge, M. Fitz, J. Hou, W.-P. Chen, and R. Jain, Ohio State University, Columbus, USA..
- *A Heuristic for Dynamic Bandwidth Allocation with Preemption and Degradation for Prioritized Requests*, P. Dharwadkar, H. Siegel, and E. Chong, Purdue University, West Lafayette, USA.
- *A General Resource Allocation Synchronization Problem*, P. Keane, Danet Inc, Wexford, USA and M. Moir, Sun Microsystems, Burlington, USA.

7C: Distributed Software Engineering (Pueblo A&B)
Session Chair: Franklin Webber, BBN Technologies, USA

- *Modeling and Analyzing Real-Time CORBA and Supervision & Control Framework and Applications*, F. Marotta, A. Morzenti, and D. Mandrioli, Politechnico di Milano, Milan, Italy..
- *JR: Flexible Distributed Programming in an Extended Java*, A. Keen, T. Ge, J. Maris, and R. Olsson, University of California, Davis, USA.
- *A Hierarchical Cluster Algorithm for Dynamic, Centralized Timestamps*, P. Ward and D. Taylor, University of Waterloo, Canada.

11:30-1:00 — **Lunch on your own**

1:00-2:30

8A: Resource Management (Fiesta)
Session Chair: Xaohua Jia, City University of Hong Kong,China.

- *Developing and Refining an Adaptive Token-Passing Strategy*, B. Englert, University of California, Los Angeles, USA, L. Rudolph, Massachusetts Institute of Technology, Cambridge, USA, and A. Shvartsman, University of Connecticut, Storrs, USA.
- *Shared State Consistency for Time-Sensitive Distributed Applications*, V. Krishnaswamy, M. Ahamad, Georgia Institute of Technology, Atlanta, USA, M. Raynal, INRISA, University of Rennes, France, and D. Bakken, Washington State University, Pullman, USA.
- *Differentiated Caching Services*; A Control-Theoretical Approach, Y. Lu, A. Sexana, and T. Abdelzaher, University of Virginia, Charlottesville, VA USA.

8B: Middleware (Kachina A&B)
Session Chair: Douglas Schimdt , University of California, Irvine ,USA

- *Comparing and Contrasting Adaptive Middleware Support in Wide-Area and Embedded Distributed Object Applications*, J. Loyall, R. Schantz, J. Zinky, P. Pal, R. Shapiro, C. Rodrigues, M. Atighetchi, D. Karr, BBN Technologies, USA, J. Gossett, The Boeing Company, USA, and C. Gill, Washington University, St. Louis, USA.
- *Constructing Adaptive Software in Distributed Systems*, W.-K. Chen, University of Arizona, Tucson, USA, M. Hiltunen, and R. Schlichting, AT&T Labs Research, Florham Park, USA.
- *Design and Implementation of a Composable Reflective Middleware Framework*, N. Venkatasubramanian, M. Deshpande, S. Mohapatra, S. Gutierrez-Nolasco, and J. Wickramasuriya, University of California, Irvine, USA.

8C: Internet Technology (Pueblo A&B)
Session Chair: Xiaodong Zhang, College of Williams and Mary, Williamsburg ,USA.

- *A Dynamic Heuristic Broadcasting Protocol for Video-on-Demand*, S. Carter, J.-F. Pâris, S. Mohan, University of Houston, USA, and D. Long, University of California, Santa Cruz, USA.
- *The Effects of Inter-packet Spacing on the Delivery of Multimedia Content*, A. Kapadia, University of Illinois, Urbana-Champaign, USA, A. Feng, and W.-C. Feng, Los Alamos National Laboratories, USA.
- *Performance Analysis of the General Packet Radio Service*, C. Lindemann and A. Thümmler, University of Dortmund, Germany.

2:30-4:00

Panel with Refreshments (Kachina A&B)

Title: OPEN SOURCE SOFTWARE: IS IT MORE OR LESS SECURE?

The development of software using open-source model of software validation and distribution continues to gain popularity worldwide. This Panel of Experts will explore the issues of whether this model is appropriate for ensuring the quality and assurance of software and how the open source model impacts the assurance of software for critical systems, both commercial and military.

Moderator: **Douglas Maughan, DARPA**

For : Peter Neumann, SRI International
Lee Badger, NAI Labs
Carl Landwehr, Mitretek

Against : Steve Lipner, Microsoft
Gary McGraw, Cigital