IPCCC 2007 Program: IEEE International Performance Computing and Communications Conference

Day 1 – Wednesday, April 11

8:00 Registration Starts

8:45 – 9:00 Welcome Message

9:00 – 10:00 Keynote I: Research Directions and Challenges in Sensor Network Technology and Applications: A Socio-technical Perspective

Prof. Taieb Znati, University of Pittsburgh

10:00 – 10:30 Break

10:30 – 12:00 Session 1

Session 1A: Wireless Networks I

Chair: *Nidal Nasser (University of Guelph)*

A QoS Framework to Support Integrated Services in Multihop Wireless Networks with Infrastructure Support

Huiqing Wang, Kin Choong Yow (Nanyang Technological University)

Mobility Support of Multi-User Services in Next Generation Wireless Systems

Luis Veloso, Eduardo Cerqueira, Augusto Neto, Marilia Curado, Edmundo Monteiro (Univ. of Coimbra); Paulo Mendes (DoCoMo Eurolabs)

A Malware Signature Extraction and Detection Method Applied to Mobile Networks

Guoning Hu, Deepak Venugopal (SMobile Systems Inc.)

Session 1B: Transport Layer

Chair: *Golden G. Richard III (Univ. of New Orleans)*

An Additive Increase Smooth Decrease (AISD) Strategy for Data and Streaming Applications

Sivakumar Bakthavachalu, Steven Bassi, Xu Jianxuan, Miguel Labrador (University of South Florida)

TCP Vegas Performance with Streaming Media

Sean Boyden, Anirban Mahanti, Carey Williamson (University of Calgary)

Stochastic Fair Traffic Management for Efficient and Robust IP Networking

Jae Chung (Airvana, Inc.); Mark Claypool, Robert Kinicki (Worcester Polytechnic Institute)

Session 1C: Architecture Modeling & Performance

Chair: *Richard Oliver (New Mexico State Univ.)*

Memory Performance and Scalability of Intel's and AMD's Dual-Core Processors: A Case Study

Lu Peng (Louisiana State Univ.); Jih-Kwon Peir (Univ. of Florida); Tribuvan Kumar Prakash (Louisiana State Univ.); Yen-Kuang Chen (Intel); David Koppelman(Louisiana State Univ.)

Application Insight Through Performance Modeling

Gabriel Marin, John Mellor-Crummey (Rice University)

Ensuring Performance in Activity-Based File Relocation

Joel Wu (Univ. of California, Santa Cruz); Bo Hong (Symantec Corporation); Scott Brandt (Univ. of California, Santa Cruz)

12:00- 1:30 Lunch

1:30 – 3:00 Session 2

Session 2A: Sensor Networks I

Chair: *Jun Peng (Univ. of Texas – Pan American)*

O(log n)-Localized Algorithms on the Coverage Problem in Heterogeneous Sensor Networks

My T. Thai(Univ. of Florida); Yingshu Li(Georgia State Univ.); Feng Wang(Univ. of Minnesota); Ding-Zhu Du (Univ. of Texas, Dallas)

Optimal Cluster Heads Selection in LEACH Architecture

Haiming Yang, Biplab Sikdar (Rensselaer Polytechnic Institute)

Moving Schemes for Mobile Sinks in Wireless Sensor Networks

Yanzhong Bi (Institute of Software, Chinese Academy of Sciences); Jianwei Niu (Beihang University); Limin Sun, Wei Huangfu, (Institute of Software, Chinese Academy of Sciences); Yi Sun (Graduate Univ. of Academy of Sciences)

Session 2B: Networks System Design

Chair: *Scott Midkiff (Virginia Tech)*

Performance Guarantees for Flow-Mapping Parallel Packet Switch

Lei Shi, Gao Xia, Bin Liu (Tsinghua University)

A Queue-based Adaptive Polling Scheme to Improve System Performance in Gigabit Ethernet Networks

Xiaolin Chang (RedFlag Software Company); Jogesh K. Muppala (HKUST)

A Power Management Proxy with a New Best-of-N Bloom Filter Design to Reduce False Positives

Ken Christensen (University of South Florida); Allen Roginsky (NIST); Miguel Jimeno (University of South Florida)

Session 2C: Network Modeling & Performance

Chair: *Chao Chen (Indiana Univ.-Purdue Univ.)*

Analysis of Queueing Delay in RPR Networks

Behnoosh Hariri, Mohammad Reza Pakravan (Sharif University of Technology)

A Low Bound for Broadcast in Optical Networks of Bounded Treewidth Using Fewest Converters

Tong Yi (Iowa Wesleyan College)

Performance Evaluation of Optimized Link State Routing-based Localization

Tomoya Takenaka, Hiroshi Mineno (Shizuoka University); Yuich Tokunaga, Naoto Miyauchi (Mitsubishi Electric Corp.); Tadanori Mizuno (Shizuoka University)

3:00 – 3:30 Break

3:30 – 5:00 Session 3

Session 3A: Ad Hoc Networks I

Chair: *Yingshu Li (Georgia State University)*

Rerouting Time and Queueing in Proactive Ad Hoc Networks

Erlend Larsen (UniK – Univ. Graduate Center at Kjeller); Vinh Pham (Unik); Knut Ovsthus (Univ.y of Bergen); Paal Engelstad (Univ. of Oslo / Telenor R&D); Oivind Kure (NTNU)

Priority-Ensured Medium Access in Ad Hoc Networks

Jun Peng (UTPA); Liang Cheng (Lehigh University)

Streaming in MANET: Proactive Link Protection and Receiver Oriented Adaptation

Ge Xu, Ying Cai (Iowa State University)

Session 3B: Networks Management & Application Layer

Chair: *Xiao Qin (New Mexico Institute of Mining and Technology)*

Understanding Localized-Scanning Worms

Zesheng Chen (Georgia Inst. of Tech.); Chao Chen (Indiana Univ.-Purdue Univ. Fort Wayne); Chuanyi Ji (Georgia Inst. of Tech.)

An Application Layer Extension for Multipoint Communication for the Session Initiation Protocol

Brian Thorp, Scott Midkiff (Virginia Tech)

Scalable and Decentralized Content-Aware Dispatching in Web Clusters

Zhiyong Xu (Suffolk Univ.); Jizhong Han (Chinese Academy of Sciences); Laxmi Bhuyan (Univ. of California)

6:00 - Reception and Poster Session

IPCCC 2007 Program: IEEE INTERNATIONAL PERFORMANCE COMPUTING AND COMMUNICATIONS CONFERENCE

DAY 2 – THURSDAY, APRIL 12

8:00 Registration Starts

8:45 – 9:00 Welcome Message

9:00 – 10:00 KEYNOTE II: WIRELESS NETWORKS: THINGS I WISH I HAD LEARNED IN KINDERGARTEN

Prof. Nitin Vaidya, University of Illinois at Urbana-Champaign

10:00 – 10:30 Break

10:30 – 12:00 SESSION 4

SESSION 4A: WIRELESS NETWORKS II

Chair: *Kin Choong Yow (Nanyang Technological University)*

Scheduling of Periodic Packets in Energy-Aware Wireless Networks

Xiao Qin, Mohammed Alghamdi, Mais Nijim, Ziliang Zong (New Mexico Institute of Mining and Technology)

Adaptive Transmission Scheme in the IEEE 802.16 WMAN with Error Prone Channel

Haitang Wang, Dharma Agrawal, Qing-An Zeng (University of Cincinnati)

A Model-Based Admission Control for 802.11e EDCA using Delay Predictions

Aleksander Bai (Telenor R&D / Univ. of Oslo); Tor Skeie (Simula Research Lab); Paal Engelstad (University of Oslo / Telenor R&D)

SESSION 4B: STORAGE

Chair: *Jeanine Cook (New Mexico State University)*

A Hybrid Disk-Aware Spin-Down Algorithm with I/O Subsystem Support

Timothy Bisson, Scott Brandt, Darrell Long (University of California at Santa Cruz)

Self-Adaptive Two-Dimensional RAID Arrays

Jehan-Francois Paris (University of Houston); Thomas Schwarz (Santa Clara University); Darrell Long (University of California, Santa Cruz)

Hierarchical Policy-Based Replication

Cormac Doherty, Neil Hurley (University College Dublin)

12:00- 1:30 Lunch

1:30 – 3:00 SESSION 5

SESSION 5A: SENSOR NETWORKS II

Chair: *Yu Wang (Univ. of North Carolina at Charlotte)*

Composite Event Detection in Wireless Sensor Networks

Chinh Vu, Raheem Beyah, Yingshu Li (Georgia State University)

Detecting Misused Keys in Wireless Sensor Networks

Donggang Liu, Qi Dong (University of Texas at Arlington)

Coverage-aware and Connectivity-Constrained Actor Positioning in Wireless Sensor and Actor Networks

Kemal Akkaya (Southern Illinois University); Mohamed Younis (Univ. of Maryland Baltimore County)

SESSION 5B: AD HOC NETWORKS II

Chair: *Miguel Labrador (Univ. of South Florida)*

How to Assign Traffic Sources to Nodes in Disaster Area Scenarios

Nils Aschenbruck, Peter Martini (University of Bonn); Michael Gerharz (FGAN/fkie)

On Frugality of Control Packets in Multi-Hop Wireless Networks

Noun Choi, Subbarayan Venkatesan (University of Texas at Dallas)

Performance Evaluation of Energy Efficient Ad Hoc Routing Protocols

Lijuan Cao, Teresa Dahlberg, Yu Wang (University of North Carolina at Charlotte)

3:00 – 3:30 Break

3:30 – 5:30 SESSION 6

SESSION 6A: MULTIMEDIA NETWORKING

Chair: *Zhiyong Xu (Suffolk Univ.)*

Workload Characterization for News-on-Demand Streaming Services

Frank Johnsen, Trude Hafsoe, Carsten Griwodz, Pal Halvorsen (University of Oslo)

Automatic Generation of User-Centric Multimedia Communication Services

Raju Rangaswami, Seyed Masoud Sadjadi, Nagarajan Prabakar, Yi Deng (Florida International University)

On Network Coding Based Multirate Video Streaming in Directed Networks

Chenguang Xu , Yinlong Xu (University of Science and Technology of China)

Peer-to-Peer Multimedia Streaming using BitTorrent

Purvi Shah, Jehan-Francois Paris (University of Houston)

SESSION 6B: NETWORK PROCESSING & LOW-POWER ARCHITECTURES

Chair: *Lu Peng (Louisiana State Univ.)*

Parallelizing Protocol Processing on SMT Processor Efficiently: A FSM Decomposition Approach

Zhibin Zhang, Li Guo, Binxing Fang, Xiaojun Chen (ICT, Chinese Academy of Science)

Scheduling Divisible Loads on Bus Networks with Arbitrary Processors Release Time and Start-Up Costs: XRMI

Jie Hu, Raymond Klefstad (University of California, Irvine)

Reducing ALU and Register File Energy by Dynamic Zero Detection

Soontae Kim (University of South Florida)

Compiler-Directed Functional Unit Shutdown for Microarchitecture Power Optimization

Santosh Talli, Ram Srinivasan, Jeanine Cook (New Mexico State University)

WORKSHOP SESSION : ESCOWI

Chair: *Nidal Nasser (University of Guelph)*

Dynamic and User-Centric Network Selection in Heterogeneous Networks

Xuejun Cai, Ling Chen, Rute Sofia (Corporate Technology, Siemens Ltd);; Yanqi Wu (Beijing Jiaotong University)

The Interworking between EDCA 802.11e and DiffServ

Asma A. Elmangosh, Majdi A Ashibani, and Fathi Ben Shatwan (Higher Institute of Industry)

Coverage-based Common Radio Resource Management in Heterogeneous CDMA/TDMA Cellular Systems

L. Wang, H. Aghvami, Nima Nafisi (King's College London); J.Pérez-Romero, O. Sallent, R. Agusti (Universitat Politècnica de Catalunya)

A New Channel Allocation Scheme for Real-Time Traffic in Wireless Cellular Networks

Vineet Chaudhary, Rajeev Tripathi, N.K.Shukla, Nidal Nasser (University of Guelph)

IPCCC 2007 Program: IEEE International Performance Computing and Communications Conference

Day 3 – Friday, April 13

8:00 Registration Starts

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8:15 – 8:30 Welcome Remark **8:30 – 10:00 Session 1: E-Commence Security & Disaster Tolerance Computing** Chair: TBD **Components and Analysis of Disaster Tolerant Computing** *Chad Lawler (Data Return, LLC), Michael Harper (SPAWAR Systems Center Charleston), Mitch Thornton (Southern Methodist University)* **A Method of Fraud & Intrusion Detection for E-payment Systems in Mobile e-Commerce** *Pallapa Venkataram, Sathish Babu, Naveen K, Samyama Gunjal (Indian Institute of Science)* **Threats Analysis of the Session Initiation Protocol Regarding Spam** *Stelios Dritsas, John Mallios, Marianthi Theoharidou, Giannis Marias, Dimitris Gritzalis (Athens University Economics and Business)*	**8:00 – 8:15 Welcome Remark** **8:15 - 9:10 Keynote Speech 1** **A New Generation of MalWare Agents** *Mr. Andrew Lee, Chief Research Officer, ESET LLC* **9:00 - 10:15 Session 1** Chair: TBD **Optimising Networks Against Malware** *Pierre-Marc Bureau and José Fernandez* **PID: A Queue Management Scheme for Improving Network Resilience Under Worm Attacks** *Jintao Xiong* **Applying Formal Evaluation to Worm Defense Design** *Raman Sharykin and Phillip A Porras* **Using Byzantine Agreement in the Design Of Intrusion Detection, Prevention & Counter Measure Systems** *Fernando C. Colon Osorio*	**8:00 - 8:10 Welcome Remark** **8:10 - 9:10 Keynote Speech** **Using IP-Based Applications for Improving Disaster Response** *Prof. Henning Schulzrinne, Columbia University* **9:15 - 10:15 Session 1: Services** Chair: TBD **First Responders' Crystal Ball: How to Scry the Emergency from a Remote Vehicle** *Marco Roccetti (University of Bologna); Mario Gerla, Claudio Palazzi (University of California, Los Angeles); Stefano Ferretti (University of Bologna); Giovanni Pau (University of California Los Angeles)* **ACM: A Transmission Mechanism for Urgent Sensor Information** *Tetsuya Kawai, Naoki Wakamiya, Masayuki Murata (Osaka University)* **QoS Provisioning in Public Safety Radio and Commercial Cellular Integrated Networks for First Responders and Critical Infrastructures** *Fei Richard Yu (Carleton University); Helen Tang (DRDC Ottawa); Victor Leung (The University of British Columbia)*
10:00 – 10:30 Break	**10:15 – 10:30 Break**	**10:15 – 10:30 Break**
10:30 – 12:00 Session 2: Attack Detection and Prevention Mechanisms Chair: TBD **An Efficient Technique for Preventing Mimicry and Impossible Paths Execution Attacks** *Danilo Bruschi, Lorenzo Cavallaro (Universita` degli studi di Milano), Andrea Lanzi (University of Milan)* **Profiling Database Applications to Detect SQL Injection Attacks** *Elisa Bertino, Ashish Kamra, James P. Early (Purdue University)* **Diversified Process Replicae for Defeating Memory Error Exploits** *Danilo Bruschi, Lorenzo Cavallaro (Universita` degli studi di Milano), Andrea Lanzi (University of Milan)*	**10:30 - 11:30 Panel 1** **Next generation strategies for defending against emerging Malware** *Panelist: Andrew Lee (CRO, ESET LLC), Jose Fernandez (École Polytechnique de Montréal), Amit Sinha (CIO AirDefense, Inc.), Noam Rathaus (CTO, BeyodSecurity, Inc), Golden G. Richard III (University of New Orleans)* *Moderator: Dr. Fernando C. Colon Osorio* **11:30 – 12:00** **Birds of a Feather – Flock Together – Short papers, work in progress**	**10:30 - 11:30 Panel** **Architectures for Next generation Networks for Critical Infrastructures** *Moderated by Prof. Ashok Agrawala, University of Maryland* **11:40 - 12:10 Session 2: Short Presentations** Chair: TBD **Traffic Chaos Reduction Scheme in Emergency Scenarios** *Syed Rizvi, Stephan Olariu (Old Dominion University); Mona Rizvi (Norfolk State University); Michele Weigle (Old Dominion University)* **A Reliable Wireless Mesh Infrastructure Deployment at Crisis Site** Raheleh Dilmaghani, Ramesh Rao (University of California at San Diego)
12:00- 1:30 Lunch	**12:00- 1:30 Lunch**	**12:10- 1:30 Lunch**
1:30 – 3:00 Session 3: Secure Protocols & Security/Survivability in Sensor/Wireless Networks Chair: TBD **Towards Survivable and Secure Wireless Sensor Networks** *Yi Qian , Kejie Lu (University of Puerto Rico at Mayaguez), David Tipper (University of Pittsburgh)* **GKM: A Group Dynamics Aware Key Management Scheme for Multicast Communications in ASNs** *Hui Ling, Taieb Znati (University of Pittsburgh)* **Towards a Collusion-Resistant Algebraic Multi-Party Protocol for Privacy-Preserving Association Rule Mining in Vertically**	**1:30 - 2:15 Keynote Speech 2** **Automatic Vulnerability Assessment in the year 2013 – Myth or Reality** *Mr. Noam Rathaus, CTO, Beyond Security, Inc.* **2:15 - 3:00 Panel 2** **Ethical Hacking & Malware – A New World of opportunities and dangers** *Panelist: TBD* *Moderator: Dr. Fernando C. Colon Osorio*	**1:30 - 3:10 Session 3: Frameworks** Chair: TBD **Rover: An Integration and Fusion Platform to Enhance Situational Awareness** *Christian Almazan, Moustafa Youssef, Ashok K. Agrawala (University of Maryland)* **Opportunistic Networks for Emergency Applications and Their Standard Implementation Framework** *Leszek Lilien, Ajay Gupta, Zijiang Yang (Western Michigan University)* **Intelligent Highway Infrastructure for Planned Evacuations** *Michele Weigle, Stephan Olariu (Old Dominion University)*

Partitioned Data *Dragos Trinca, Sanguthevar Rajasekaran (University of Connecticut)*		**A Gossip-Style Crash Faults Detector for MANETs and Wireless Mesh Networks** *Azzedine Boukerche (Univ. of Ottawa, Canada); Mourad Elhadef (University of Ottawa, Canada)*
3:00 – 3:30 Break	**3:00 – 3:30 Break**	**3:10 – 3:30 Break**
3:30 – 5:00 SESSION 4: ACCESS CONTROL MODELS AND MECHANISMS Chair: TBD **Applications of the Oriented Permission Role-Based Access Control Model** *Liang Chen, Jason Crampton (Royal Holloway University of London)* **Classification Model for Access Control Constraints** *Mathias Kohler, Christian Liesegang, Andreas Schaad (SAP AG)* **CT-RBAC: A Temporal RBAC Model with Conditional Periodic Time** *Kai Ouyang (Wuhan Univ. of Sci. & Tech), James B. D. Joshi (University of Pittsburgh)*	**3:30 – 4:50 SESSION 2** Chair: TBD **Epidemics of Mobile Worms** *Yury Bulygin* **Inverse Geolocation: Worms with a Sense of Direction** *Randal Acton , Nathan Friess and John Aycock* **SpyCon: Emulating User Activities to Detect Evasive Spyware** *Madhusudhanan Chandrasekaran , Vidyaraman Sankaranarayanan and Shambhu Upadhyaya* **d-ACTM: Distributed Anomaly Connection Tree Method to detect Silent Worms** *Nobutaka Kawaguchi , ,Hiroshi Shigeno and Kenichi Okada* **4:50 CONCLUDING REMARKS**	**3:30 - 5:10 SESSION 4: Protocols** Chair: TBD **LoST: A Protocol for Mapping Geographic Locations to Public Safety Answering Points** *Henning Schulzrinne (Columbia University); Hannes Tschofenig (Siemens AG); Andrew Newton (SunRocket, Inc.); Ted Hardie (Qualcomm)* **Adaptive Probabilistic Scheduling for a Cellular Emergency Network** *Jiazhen Zhou, Cory Beard (University of Missouri-Kansas City)* **IMPACT - A Family of Cross-Layer Transmission Protocols for Wireless Sensor Networks** *Marcin Brzozowski (IHP, Germany); Reinhardt Karnapke, Jörg Nolte (BTU Cottbus, Germany)* **Protecting First-Level Responder Resources in an IP-based Emergency Services Architecture** *Hannes Tschofenig (Siemens AG); Henning Schulzrinne (Columbia University); Andrew Newton (SunRocket, Inc.); Murugaraj Shanmugam (Siemens Networks)*