



DSN 2007

The 37th Annual IEEE/IFIP International Conference on Dependable Systems and Networks

June 25 - June 28, 2007

Edinburgh International Conference Centre, Edinburgh, UK

DSN 2007 Full Program

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MONDAY, JUNE 25

08:30-09:00	Coffee and Tutorial Registration
09:00-12:30	Parallel Tutorials Tutorial 1: Surviving Large Scale Failures in the Internet <i>K. Kant, Intel Corporation, USA</i> Tutorial 2: Model-Based Engineering of Dependable Systems with AADL <i>D Gluch, SEI/Embry-Riddle Aeronautical University, USA and B Lewis, Amry AMCOM SED, USA</i>
12:30-13:30	Lunch for Tutorial Registrants only
13:30-17:00	Parallel Tutorials Tutorial 3: Dependable E-Voting Systems <i>P. Ryan, University of Newcastle upon Tyne, UK</i> Tutorial 4: Software Architectures for Dependable Systems <i>R. de Lemos, University of Kent, UK, C. Gacek, University of Newcastle upon Tyne, UK and A-E. Rugin, LAAS-CNRS, France</i> Tutorial 5: Robustness Patterns: coping with software bugs at run-time <i>P. Felber, University of Neuchatel, Switzerland and C. Fetzer, Dresden University of Technology, Germany</i>
18:00-20:00	Conference Registration and Welcome Reception

TUESDAY, JUNE 26

08:00-08:30	Coffee and Conference Registration
08:30-10:00	Opening Ceremony and Keynote Address Keynote Speaker: Professor Tony Hoare FRS FREng, Microsoft Research Ltd., Cambridge, UK Science and engineering: a collusion of cultures

10:00-11:00	Coffee Break and Exhibition
11:00-12:30	<p>DCCS 1A Security Protection: Architectural Approaches</p> <p>Chair: Mohammad Zulkernine, Queens University, Ontario, Canada</p> <p>Augmenting Branch Predictor to Secure Program Execution <i>Yixin Shi and Gyungho Lee, University of Illinois at Chicago, Chicago, IL, USA</i></p> <p>A Firewall for Routers: Protecting Against Routing Misbehavior <i>Ying Zhang, Zhuoqing Morley Mao, University of Michigan, Ann Arbor, MI, USA Jia Wang, AT&T Labs-Research, USA</i></p> <p>An Architectural Approach to Preventing Code Injection Attacks <i>Ryan Riley, Dongyan Xu, Purdue University, West Lafayette, IN, USA, Xuxian Jiang George Mason University, Fairfax, VA, USA</i></p>
	<p>DCCS 1B Software Fault Tolerance</p> <p>Chair: David Taylor, University of Waterloo, Canada</p> <p>Failure Resilience for Device Drivers <i>Jorrit N. Herder, Herbert Bos, Ben Gras, Philip Homburg and Andrew S. Tanenbaum, Vrije Universiteit, Amsterdam, Netherlands</i></p> <p>Fault Tolerance Connectors for Unreliable Web Services <i>Nicolas Salatge, Jean-Charles Fabre, LAAS-CNRS, Toulouse, France</i></p> <p>Robustness and Security Hardening of COTS Software Libraries <i>Martin Süßkraut and Christof Fetzer, Technische Universität Dresden, Germany</i></p>
	<p>PDS 1C System Architecture and Software Assessment</p> <p>Chair: Sy-Yen Kuo, National Taiwan University, Taiwan</p> <p>A Framework for Architecture-Level Lifetime Reliability Modeling <i>Jeonghee Shin, Victor Zyuban, Zhigang Hu, Jude Rivers and Pradip Bose, IBM T. J. Watson Research Center, Yorktown Heights, NY, USA</i></p> <p>Processor-level Selective Replication <i>Nithin Nakka, Karthik Pattabiraman and Ravishankar Iyer, University of Illinois at Urbana-Champaign, IL, USA</i></p> <p>Robustness Testing of the Windows DDK <i>Manuel Mendonça and Nuno Neves, University of Lisboa, Lisboa, Portugal</i></p>
	<p>Workshop on Dependable Application Support for Self-Organizing Networks</p> <p>Opening Remarks <i>Paul Ezhilchelvan, Newcastle University, UK</i></p> <p>Keynote Address - Bubble Rap: Forwarding in Small World DTNs <i>Jon Crowcroft, University of Cambridge, UK</i></p> <p>Discussion</p>
	<p>Workshop on Hot Topics in System Dependability</p> <p>Operating systems and security</p> <p>Improving Dependability by Revisiting Operating System Design <i>Francis M. David, Jeffrey C. Carlyle, Ellick M. Chan, Philip A. Reames, Roy H. Campbell, University of Illinois at Urbana-Champaign, USA</i></p> <p>Data Sanitization: Improving the Forensic Utility of Anomaly Detection System <i>Gabriela F. Cretu, Angelos Stavrou, Salvatore J. Stolfo and Angelos D. Keromytis, Columbia University, USA</i></p> <p>Reliable Device Drivers Require Well-Defined Protocols <i>Leonid Ryzhyk, Timothy Bourke, Ihor Kuz, NICTA and the University of New South Wales, Australia</i></p>
	<p>Fast Abstracts 1</p> <p>Chair: Antonio Casimiro Costa, University of Lisboa, Portugal</p> <p>Choosing Application Structuring and Fault Tolerance Using Assumptions <i>Alexei Iliasov, Alexander Romanovsky, Newcastle University</i></p> <p>A Formally Proved Virtual Machine for High-Integrity Applications <i>Stephen Wright, Bristol University</i></p> <p>Finding the Right Time to Inject an Error</p>

	<p><i>Andreas Johansson, Neeraj Suri, TU-Darmstadt</i></p> <p>Log Transformation Technique for Failure Analysis <i>Sachin Garg, Navjot Singh, Ranjith Vasireddy, Shalini Yajnik, Avaya Labs</i></p> <p>An Estimation-Based Redundant Task Dispatch Policy for Volunteer Computing Platforms <i>Hong Wang, Hiroyuki Takizawa, Hiroaki Kobayashi, Tohoku University</i></p> <p>Resilience Modelling Through Discrete Event and Continuous Time Co-Simulation <i>Zoe Andrews, John Fitzgerald, Newcastle University, Marcel Verhoef, Chess and Radboud University Nijmegen</i></p> <p>A Formal Approach to Dependable Evolution of Access Control Policies in Dynamic Collaborations <i>Jeremy W. Bryans, John S. Fitzgerald, Panos Periorellis, Newcastle University</i></p> <p>A Simulator for Performability Analysis of Electrical Power Systems Considering Interdependencies <i>Francesco Romani, Silvano Chiaradonna, Felicità Di Giandomenico, ISTI-CNR, Luca Simoncini, Università di Pisa</i></p> <p>Towards Compositional ICT for Critical Infrastructure Protection <i>Carl Hauser, David Bakken, Washington State University, Neeraj Suri, TU Darmstadt, Roberto Baldoni, Univ. of Rome "La Sapienza"</i></p> <p>Exploiting Symmetry of Distributed FT Protocols To Ease Model Checking <i>Peter Bokor, András Pataricza, Budapest University of Technology and Economics, Marco Serafini, Neeraj Suri, Technische Universität Darmstadt</i></p> <p>Developing Dependable Automotive Embedded Systems using the EAST-ADL <i>DeJiu Chen, KTH, Rolf Johansson, Mentor Graphics, Henrik Lonn, Volvo Technology, Martin Törnngren, KTH</i></p> <p>Intrusion Tolerance in Ad Hoc Networks through Swarms of Fragments Replicas <i>James Grant, Jonathan So, Rogério de Lemos, University of Kent</i></p>
12:30-14:00	Lunch and Exhibition
14:00-16:00	<p>DCCS 2A Distributed Consensus Chair: Hari Govind Ramasamy, IBM Zürich, Switzerland</p> <p>Automatic Verification and Discovery of Byzantine Consensus Protocols <i>Piotr Zielinski, University of Cambridge, Cambridge, UK</i></p> <p>Knowledge Connectivity vs. Synchrony Requirements for Fault-Tolerant Agreement in Unknown Networks <i>Fabiola Greve, Federal University of Bahia, Bahia, Brazil Sébastien Tixeuil, Université Paris-Sud, Orsay, France</i></p> <p>Communication Predicates: A High-level Abstraction for Coping with Transient and Dynamic Faults <i>Martin Hutle and André Schiper, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland</i></p> <p>Synchronous Consensus with Mortal Byzantines <i>Josef Widder, Günther Gridling, Bettina Weiss, Vienna University of Technology, Vienna, Austria, Jean-Paul Blanquart, Astrium Satellites, France</i></p> <p>DCCS 2B Practical Experience Reports Chair: Rick Buskens, Lockheed Martin, USA</p> <p>Reliability Techniques for RFID-Based Object Tracking Applications <i>Ahmad Rahmati, Rice University, Houston, TX, USA, Matti Hiltunen, Rittwik Jana, AT&T Labs – Research, Florham Park, NJ, USA, Lin Zhong, Rice University, Houston, TX, USA</i></p> <p>Profiling Attacker Behavior Following SSH Compromises <i>Daniel Ramsbrock, Robin Berthier and Michel Cukier, University of Maryland, College Park, MD, USA</i></p> <p>Dependability Assessment of Grid Middleware <i>Nik Looker and Jie Xu, University of Leeds, Leeds, UK</i></p> <p>Assessing Robustness of Web-services Infrastructures <i>Marco Vieira, Nuno Laranjeiro and Henrique Madeira, University of Coimbra, Portugal</i></p> <p>Protecting Cryptographic Keys From Memory Disclosure Attacks <i>Keith Harrison and Shouhuai Xu, University of Texas, San Antonio, TX, USA</i></p> <p>PDS 2C Measurements and Monitoring Chair: Ludmila Cherkasova, HP Labs, USA</p> <p>SLAM: Sleep-Wake Aware Local Monitoring in Sensor Networks. <i>Issa Khalil, Saurabh Bagchi, Ness B. Shroff, Purdue University, West Lafayette, IN, USA</i></p>

What Supercomputers Say: A Study of Five System Logs
Adam Oliner, Stanford University, Stanford, CA, USA and Jon Stearley, Sandia National Laboratories, USA

How do Mobile Phones Fail? A Failure Data Analysis of Symbian OS Smart Phones
Marcello Cinque, Domenico Cotroneo, Università di Napoli, Napoli, Italy Zbigniew Kalbarczyk and Ravishankar Iyer, University of Illinois at Urbana-Champaign, IL, USA

A Real-time Network Traffic Profiling System
Kuai Xu, Feng Wang, University of Minnesota, Minneapolis, MN, USA Supratik Bhattacharyya, Sprint ATL, USA Zhi-Li Zhang, University of Minnesota, Minneapolis, MN, USA

[Workshop on Dependable Application Support for Self-Organizing Networks](#)

Enhancing Dependability in Information Dissemination

Fault-Tolerant P2P Networks: How Dependable is Greedy Routing?
Sabina Serbu, Peter Kropf and Pascal Felber, University of Neuchatel, Neuchatel, Switzerland

Boosting the Reliability of Deterministic Broadcasting Protocols for MANETs
Talmal Oliveira and Fabiola Greve, Federal University of Bahia, Brazil

Cross-Layer Design for Information Dissemination in Wireless Sensor Networks: State of Art and Research Challenges
Mohamad Jambli and Alan Tully, University of Newcastle, UK

Infrastructure Support for Information Processing

Using Topological Awareness to Support Fault-Tolerance in Dynamic P2P Grid Applications
Paul Townend and Jie Xu, Leeds University, UK

MIDIC: a middleware for Volunteer Computing
Massimo Bernaschi, IAC-CNR, Rome, Italy Emanuele Gabrielli, Università "La Sapienza" di Roma, Italy

A Consensus Service for Applications in Large-Scale Self-Organizing Networks
Ourat-ul-Ain Inayat and Paul Ezhilchelvan University of Newcastle, UK

[Workshop on Hot Topics in System Dependability](#)

Posters

Fully Distributed Service Configuration Management
Paul Murray, and Patrick Goldsack, Hewlett-Packard Laboratories, USA

Hidden Problems of Asynchronous Proactive Recovery
Paulo Sousa, Nuno Ferreira Neves, and Paulo Verissimo, Univ. of Lisboa, Portugal

Band-aid Patching
Stelios Sidiroglou, Columbia University, Sotiris Ioannidis, Stevens Institute of Technology, Angelos D. Keromytis, Columbia University, USA

Cognitive Enhancements to Support Dependability
Partha Pal, Franklin Webber, and Richard Schantz, BBN Technologies, USA

Architecture-Driven Diagnosis of Performance Failures in a Token Ring
Andrew Williams and Priya Narasimhan, Carnegie Mellon University, USA

Diagnosing Misconfiguration with Dynamic Detection of Configuration Invariants
Dong Zhou, DoCoMo Labs, USA

PRIMS : Making NVRAM Suitable for Extremely Reliable Storage
Kevin M. Greenan, Ethan L. Miller, University of California, Santa Cruz, USA

Dependability, Access Diversity, Low Cost: Pick Two
Ming Chen, Lex Stein, Zheng Zhang, Microsoft Research Asia

Dependable Security: Testing Network Intrusion Detection Systems
Carrie Gates, CA Labs, Carol Taylor, University of Idaho, and Matt Bishop, University of California Davis, USA

An Empirical Study of Memory Hardware Errors in A Server Farm
Xin Li, Michael C. Huang, and Kai Shen, University of Rochester, Lingkun Chu, Ask.com, USA

No More Hot Dependencies: Toward Dependency-Agnostic Online Upgrades In Distributed Systems
Tudor Dumitras, Jiaqi Tan, Zhengheng Gho, Priya Narasimhan, Carnegie Mellon University, USA

Student Forum 1

Chair: Andrea Bondavalli, University of Florence, Italy

High Defect Tolerant Robust Memory Designs
Costas Argyrides, Bristol University, UK

A Model of Home Network System for Detecting Feature Interactions by Applying Model Checking
Takafumi Matsuo, Osaka University, Japan

	<p>Network Reliability Analysis via BDD <i>Roberta Terruggia, Universit`a di Torino, Italy</i></p> <p>Combining Optimism and Pessimism in a Grid Message Logging Protocol <i>Thomas Ropars, IRISA, Universit`e de Rennes, France</i></p> <p>Diagnosis Framework for Complex Critical Systems/Infrastructures <i>Alessandro Daidone, University of Florence, Italy</i></p> <p>Robust Virtual Coordinate Systems with Byzantine Participants <i>David Zage, Purdue University, USA</i></p> <p>Detecting Architectural Mismatches Between Web Services <i>Carl Gamble, Newcastle University, UK</i></p>
16:00-16:30	Coffee Break and Exhibition
16:30-18:00	<p>DCCS 3A Embedded Systems</p> <p>Chair: Philip Koopman, Carnegie Mellon University, USA</p> <p>Fault Tolerant Planning for Critical Robots <i>Benjamin Lussier, Matthieu Gallien, Raja Chatila, J�r�mie Guiochet, Felix Ingrand, Marc-Olivier Killijian and David Powell, LAAS-CNRS, Toulouse, France</i></p> <p>Insights into the Sensitivity of the BRAIN (Braided Ring Availability Integrity Network) <i>Michael Paulitsch and Brendan Hall, Honeywell Aerospace, Minneapolis, MN, USA</i></p> <p>A Tunable Add-On Diagnostic Protocol for Time Triggered Systems <i>Marco Serafini, Darmstadt University of Technology, Germany, Jonny Vinter, SP, Sweden Astrit Ademaj, TU Vienna, Austria Fulvio Tagliab�, Fiat, Italy Jens Koch, Airbus Deutschland, Germany Wolfgang Brandst�tter, Audi, Germany Neeraj Suri, Darmstadt University of Technology, Germany</i></p>
	<p>DCCS 3B Dependability Modeling</p> <p>Chair: Aad van Moorsel, University of Newcastle, UK</p> <p>Enhanced Reliability Modeling of RAID Storage Systems <i>Jon Elerath, Network Appliance, Inc., Sunnyvale, CA, USA, Michael Pecht, University of Maryland, College Park, MD, USA</i></p> <p>On a Modeling Framework for the Analysis of Interdependencies in Electrical Power Systems <i>Silvano Chiaradonna, CNR-ISTI, Pisa, Italy Paolo Lollini, University of Florence, Florence, Italy Felcita Di Giandomenico, CNR-ISTI, Pisa, Italy</i></p>
	<p>PDS 3C Practical Experience Reports</p> <p>Chair: Marco Vieira, University of Coimbra, Portugal</p> <p>RAS by the Yard <i>Alan Wood and Swami Nathan, Sun Microsystems, Inc., Santa Clara, CA, USA</i></p> <p>Web Services Wind Tunnel: On Performance Testing Large-Scale Stateful Web Services <i>Marcelo De Barros, Jing Shiao, Kenton Gidewall, Chen Shang, Joe Forsmann and Hui Shi, Microsoft Corporation, Redmond, WA, USA</i></p> <p>Application of Software Watchdog as a Dependability Software Service for Automotive Safety Relevant Systems <i>Xi Chen, DaimlerChrysler AG, Germany Juejing Feng, RWTH Aachen, Aachen, Germany Martin Hiller, Volvo Technology Corporation, Gothenburg, Sweden Vera Lauer, DaimlerChrysler AG, Germany</i></p> <p>Workshop on Dependable Application Support for Self-Organizing Networks</p> <p>Novel Approaches to Information Management</p> <p>Dependability Requirements for Hovering Information <i>Giovanna Di Marzo Serugendo, Birkbeck College, London, UK Alfredo Villalba and Dimitri Konstantas, University of Geneva, Switzerland</i></p> <p>Consensus When Coverage Cannot Be Complete <i>Khaled Alekeish and Paul Ezhilchelvan, Newcastle University Francois Bonnet, IRISA, Rennes, France</i></p> <p>EPITELLA: Improving the Gnutella Search Algorithm through Epidemic Spreading Models for Complex Networks <i>Holger Kampffmeyer, Mirco Musolesi and Cecilia Mascolo University College London, London, United Kingdom</i></p> <p>Using Random Walks to Find Resources in Unstructured Self-Organized P2P Networks <i>Vicent Cholvi, Universitat Jaume I, Spain Antonio Fernandez, Luis Lopez and Luis Rodero-Merino LADyR, Universidad Rey Juan Carlos, Mostoles, Spain</i></p>

Wrap-up: 17:50 - 18:00

[Workshop on Hot Topics in System Dependability](#)

Replication

Delta Execution for Software Reliability

Yuanyuan Zhou, Darko Marinov, William Sanders, Craig Zilles, Marcelo d'Amorim, Steven Lauterburg, Ryan M. Lefever and Joe Tucek, University of Illinois at Urbana-Champaign, USA

Large-Scale Byzantine Fault Tolerance: Safe but Not Always Live

Rodrigo Rodrigues, INESC-ID and Technical University of Lisbon, Portugal, Petr Kouznetsov, Max Planck Institute for Software Systems, Germany, Bobby Bhattacharjee, University of Maryland, USA

Classic Paxos vs. Fast Paxos: Caveat Emptor

Flavio Junqueira, Yahoo! Research Barcelona, Spain, Yanhua Mao, and Keith Marzullo, UC San Diego, USA

Fast Abstracts 2

Chair: Michel Cukier, University of Maryland, USA

The ReSIST Resilience Knowledge Base

T. Anderson, Z.H. Andrews, J.S. Fitzgerald, B. Randell, Newcastle University, H. Glaser, I.C. Millard, University of Southampton

Topology Reconfiguration Problem for Core-Level Redundancy in Homogeneous Chip Many-Core Processors

Lei Zhang, Yinhe Han (Chinese Academy of Sciences), Qiang Xu, The Chinese University of Hong Kong, Xiaowei Li, Chinese Academy of Sciences

Extraction of Fault-Prone Modules Based on Fault Tracking Data from Open Source Software Repository

Masahiro Kimoto, Osamu Mizuno, Tohru Kikuno, Osaka University

Randomized Distributed Algorithm for Peer-to-Peer Data Replication in Wireless Ad Hoc Networks

Hong-Zu Chou, Szu-Chi Wang, Sy-Yen Kuo, National Taiwan University

Client-Server Coupled Monitoring for Web Application toward User-oriented Autonomic Management

Tomohiro Nakamura, Shinichi Kawamoto, Masashi Egi, Takao Sakurai, Hitachi Ltd.

Data Partitioning through Integrity Constraints

Lorenz Frohofer, Markus Baumgartner, Johannes Osrael, Karl M. Goeschka, Vienna University of Technology

Dependable Compositions

Nigel Jefferson, Steve Riddle, Newcastle University

Envisioning Stealthy Botnet C&C and Graph-based Detection Metrics

Shouhui Xu, University of Texas at San Antonio, Keesook J. Han, Air Force Research Laboratory

Quick and Lightweight Detection of Anomalous Drivers in Multi-server Operating Systems to Improve Availability

Ryota Ozaki, Soichiro Hidaka, Kazuya Kodama, Katsumi Maruyama, National Institute of Informatics

Energy Aware Wireless Sensor Networks Dependability Benchmarking

M. T. Bennani, R. Ben Ayed, S. Naimi, Ecole Nationale d'Ingénieurs de Tunis

Fast Fault Injection with Virtual Machines

Martin Süßkraut, Stephan Creutz, Christof Fetzer, Technische Universität Dresden

Cost-efficient assessment and use of COTS/SOUP used in Marine Systems

Asgeir Torstensen, Torbjørn Skramstad, Lars Bratthall, Det Norske Veritas Research & Innovation, Egil Joahansen, ABB Marine Norway

WEDNESDAY, JUNE 27

09:00-10:30

DCCS 4A Hardware Fault Tolerance: Emerging Challenges

Chair: Johan Karlsson, Chalmers University, Sweden

Superscalar Processor Performance Enhancement Through Reliable Dynamic Clock Frequency Tuning

Viswanathan Subramanian, Mikel Bezdek, Naga Durgaprasad Avirneni and Arun Somani, Iowa State University, Ames, IA, USA

Determining Fault Tolerance of XOR-based Erasure Codes Efficiently

Jay J. Wylie and Ram Swaminathan, HP Labs, Palo Alto, CA, USA

Fault Tolerant Approaches for Nanoelectronic Logics
Wenjing Rao, Alex Orailoglu and Ramesh Karri, University of California, San Diego, CA, USA

DCCS 4B VM Rejuvenation and Network Reliability

Chair: Matti Hiltunen, AT&T Labs Research, USA

Concilium: Collaborative Diagnosis of Broken Overlay Routes
James Mickens and Brian Noble, University of Michigan, Ann Arbor, MI, USA

R-Sentry: Providing Continuous Sensor Services Against Random Node Failures
Shengchao Yu and Yanyong Zhang, Rutgers University, Piscataway, NJ, USA

A Fast Rejuvenation Technique for Server Consolidation with Virtual Machines
Kenichi Kourai and Shigeru Chiba, Tokyo Institute of Technology, Tokyo, Japan

PDS 4C Distributed Algorithms

Chair: Michel Raynal, IRISA, Université de Rennes, France

Evaluating the Impact of Simultaneous Round Participation and Decentralized Decision on the Performance of Consensus

Livia Sampaio, Universidade Federal de Campina Grande, Brazil Michel Hurfin, IRISA - INRIA, Rennes, France Francisco Brasileiro, Universidade Federal de Campina Grande, Brazil Fabiola Greve, Universidade Federal da Bahia, Brazil

On the Cost of Modularity In Atomic Broadcast

Olivier Rütli, Ecole Polytechnique Fédérale de Lausanne, Switzerland Sergio Mena, University of York, UK Richard Ekwall and André Schiper, Ecole Polytechnique Fédérale de Lausanne, Switzerland

Eventually k-Bounded Wait-Free Distributed Daemons

Scott Pike and Yantao Song, Texas A&M University, College Station, TX, USA

[Workshop on Architecting Dependable Systems](#) - Software Architectures and Dependability

Chair: Cristina Gacek

Keynote Address: Dependability of Web Service Architectures
Wolfgang Emmerich, University College London, UK

Discussion

[Workshop on Assurance Cases for Security: The Metrics Challenge](#)

Introductions and Workshop Organization

Assurance Case Metrics -- case study on LOCK
O. Sami Saydjari, Cyber Defense Agency, USA

Survivability Metrics -- A View from the Trenches
Partha Pal, Richard Schantz, Franklin Webber, BBN Technologies, USA

Trust-IT -- a Framework for Trust Cases
Janusz Gorski, Gdansk University of Technology, Poland

Fast Abstracts 3

Chair : Hiroshi Nakamura, The University of Tokyo, Japan

On the Need for Dependability Research on Service Oriented Systems
Johannes Osrael, Lorenz Frohofer, Karl M. Goeschka, Vienna University of Technology

Using BufferGuard to Defend Against Buffer Overflow Attacks
Yi Wang, Bing Mao, Li Xie, Nanjing University

Recoverability of Rotational Uncoordinated Checkpointing
Mamoru Ohara, Tokyo Metropolitan Industrial Technology Research Institute, Takahiro Uesugi, Masayuki Arai, Satoshi Fukumoto, Tokyo Metropolitan University

Assessment of the Effect of Processor Offlining on System Reliability/Availability Against Hardware Faults
Dong Tang, William Bryson, Richard Elling, Sun Microsystems, Inc.

Improved Dynamic Fault Tree modelling using Bayesian Networks
David Marquez, Martin Neil, Norman Fenton, Queen Mary, University of London

Downtime-Frequency Curves for Availability Characterization
Iikka Norros, Urho Pulkkinen, Jorma Kilpi, VTT Technical Research Centre of Finland

A Case for Heterogeneous Architectures
Marco Serafini, Neeraj Suri, Technical University of Darmstadt

	<p>Protecting CRITICAL Things <i>Alysson Neves Bessani, Paulo Sousa, Miguel Correia, Nuno Ferreira Neves, Paulo Verissimo, Universidade de Lisboa</i></p> <p>Correlating security vulnerabilities with software faults <i>José Fonseca, Polytechnic Institute of Guarda, Marco Vieira, Henrique Madeira, University of Coimbra</i></p> <p>Middleware Support for Time-Elastic Database Applications <i>António Casimiro, FCUL, Marco Vieira, Henrique Madeira, DEI-CISUC</i></p>
10:30-11:00	Coffee Break
11:00-13:00	<p>DCCS 5A Soft Errors: Analysis and Protection</p> <p>Chair: A.J. KleinOsowski, IBM, USA</p> <p>A Cost-Effective Dependable Microcontroller Architecture with Instruction-Level Rollback for Soft Error Recovery <i>Teruaki Sakata, Teppei Hirotsu, Hiromichi Yamada, Hitachi Research Laboratory, Hitachi Ltd., Hitachi-shi, Japan Takeshi Kataoka, Standard Product Business Group, Renesas Technology Corp., Japan</i></p> <p>Architecture-Level Soft Error Analysis: Examining the Limits of Common Assumptions <i>Xiaodong Li, Sarita Adve, University of Illinois at Urbana Champaign, IL, USA, Pradip Bose and Jude Rivers, IBM T.J. Watson Research Center, Yorktown Heights, NY, USA</i></p> <p>Feedback Redundancy: A Power Efficient SEU-Tolerant Latch Design for Deep Sub-Micron Technologies <i>Mahdi Fazeli, Ahmad Patooghy, Seyed Ghassem Miremadi and Alireza Ejlali, Sharif University of Technology, Tehran, Iran</i></p> <p>Using Register Lifetime Predictions to Protect Register Files Against Soft Errors <i>Pablo Montesinos, Wei Liu and Josep Torrellas, University of Illinois at Urbana Champaign, IL, USA</i></p>
	<p>DCCS 5B Processor Level Fault Tolerance</p> <p>Chair: Cristian Constantinescu, Advanced Micro Devices, AMD, USA</p> <p>Using Process-Level Redundancy to Exploit Multiple Cores for Transient Fault Tolerance <i>Alex Shye, Tipp Moseley, Vijay Janapa Reddi and Daniel Connors, University of Colorado at Boulder, CO, USA</i></p> <p>Inherent Time Redundancy (ITR): Using Program Repetition for Low-Overhead Fault Tolerance <i>Vimal Reddy and Eric Rotenberg, North Carolina State University, Raleigh, NC, USA</i></p> <p>Utilizing Dynamically Coupled Cores to Form a Resilient Chip Multiprocessor <i>Christopher LaFrieda, Engin Ipek, Jose Martinez and Rajit Manohar, Cornell University, Ithaca, NY, USA</i></p> <p>BlackJack: Hard Error Detection with Redundant Threads on SMT <i>Ethan Schuchman and T. N. Vijaykumar, Purdue University, West Lafayette, IN, USA</i></p>
	<p>PDS 5C Availability of Distributed Systems</p> <p>Chair: Paul Ezhilchelvan, Newcastle University, UK</p> <p>Measuring Availability in Optimistic Partition-tolerant Systems with Data Constraints <i>Mikael Asplund, Simin Nadjm-Tehrani, Linköping University, Sweden Stefan Beyer and Pablo Galdamez, Universidad Politcnica de Valencia, Spain</i></p> <p>Scaling and Continuous Availability in Database Server Clusters through Multiversion Replication <i>Kaloian Manassiev and Cristiana Amza, University of Toronto, Canada</i></p> <p>Improving Recoverability in Multi-tier Storage Systems <i>Marcos K. Aguilera, Kimberly Keeton, Arif Merchant, Kiran-Kumar Muniswamy-Reddy and Mustafa Uysal, Hewlett-Packard Laboratories, Palo Alto, CA, USA</i></p> <p>Portable and Efficient Continuous Data Protection for Network File Servers <i>Ningning Zhu and Tzicker Chiueh, Stony Brook University, Stony Brook, NY, USA</i></p>
	<p>Workshop on Architecting Dependable Systems - Critical Infrastructures</p> <p>Chair: Felicita Di Giandomenico</p> <p>Architecting Dependable Systems Using Virtualization <i>H. V. Ramasamy, M. Schunter</i></p> <p>Robust Overlay Networks for Microgrid Control Systems <i>G. Deconinck, T. Rigole, H. Beitollahi, R. Duan, B. Nauwelaers, E. Van Lil, J. Driesen, R. Belmans, G. Dondossola</i></p>

	<p>Panel: Architecting Critical Infrastructures</p> <hr/> <p>Workshop on Assurance Cases for Security: The Metrics Challenge</p> <p>Parameters of Quantitative Security Assessment of Complex Systems <i>Marcelo Maserà and Ignor Nai Fovino, Joint Research Centre, USA</i></p> <p>Arguing Security using a Probabilistic Risk Assessment Model <i>Ann Miller and Krishna Mohan Moleyar, University of Missouri - Rolla, USA</i></p> <p>Quality of Assurance Cases <i>Samuel T. Woodwine, Jr., James Madison University, USA</i></p> <p>Reviewing Assurance Arguments - A Step-by-Step Approach <i>T.P. Kelly, University of York, UK</i></p> <p>Discussion</p> <hr/> <p>Student Forum 2</p> <p>Chair Michel Cuckier, University of Maryland, USA</p> <p>On Protecting Functional Units with Temporal Redundancy <i>Elias Mizan, University of Texas at Austin, USA</i></p> <p>Event Notification Service for Interconnected ATM Systems <i>Christian Eposito, Università di Napoli Federico II, Italy</i></p> <p>Towards the Implementation of an Embedded Wormhole <i>Hugo Ortiz, University of Lisbon, Portugal</i></p> <p>Safekeeping Your Keys: Keep Them Out of RAM <i>Timothy Paul Parker, University of Texas at San Antonio, US</i></p> <p>Transparent Recovery from Operating System Errors <i>Francis M. David, University of Illinois at Urbana-Champaign, USA</i></p> <p>Dependency-Agnostic Online Upgrades in Distributed Systems <i>Tudor Dumitras, Carnegie Mellon University, USA</i></p> <p>Best Recovery Practices for Internet Services with Multi-tier Reboots <i>Rui Zhang, Oxford University, UK</i></p>
13:00-14:00	Lunch
14:00-16:00	<p>The National Programme for Information Technology in the UK Health Service Dependability Challenges and Strategies</p> <p>Chair: Brian Randell, University of Newcastle upon Tyne, UK</p> <p>The National Health Service (NHS) provides the majority of health-care in the UK. Its main section, that for England, serves a population of over 50 million, employs 40,000 general practitioners (family physicians), 80,000 other doctors, and 350,000 nurses, and includes over 300 hospitals.</p> <p>Its National Programme for Information Technology (NPfIT) is the largest civil IT project in the world. (Estimates of its total cost have ranged from £6.2 billion up to £20 billion.) This project, which was launched in 2002, aims to implement electronic care records for all patients and to provide a reliable and secure information service, for medical records, radiography, patient administration, etc., for all the hospitals, and all general practitioners' premises, to which all the NHS health professionals in England will have strictly-controlled access. This Special Plenary Session will provide an overview of NPfIT, and its dependability challenges and strategies.</p> <p><u>Speakers:</u></p> <p>Dr. Libby Morris, Hermitage Medical Practice, Edinburgh - "The Dangers of Speeding"</p> <p>Dr. Paul Jones, Chief Technology Officer, NHS Connecting for Health - "The National Programme for IT - A view from the inside"</p> <p>Mr. Martyn Legge, Computer Science Corporation - "CSC's approach to delivering dependability and security"</p> <p>Professor Ross Anderson, University of Cambridge - "Safety and Privacy in Clinical Information Systems"</p> <hr/> <p>Workshop on Architecting Dependable Systems - Component-based Development</p> <p>Chair: Cristina Gacek</p> <p>Detecting Mode Inconsistencies in Component-Based Embedded Software <i>H. Sozer, C. Hofmann, B. Tekinerdogan, M. Aksit</i></p> <p>An Assume-Guarantee Method for Modular Verification of Evolving Component-Based Software <i>P. N. Hung, N. T. Thang, T. Katayama</i></p> <p>Verification and Validation of a Fault-Tolerant Architectural Abstraction <i>P. H. S. Brito, R. de Lemos, E. Martins, C. M. F. Rubira</i></p>

	<p>Analysis and Synthesis for Architecting Dependability</p> <p>Chair: Rogério de Lemos</p> <p>Automatic Generation of Static Fault Trees <i>A. Joshi, S. Vestal, P. Binns</i></p> <p>Generating a Family of Byzantine Tolerant Protocol Implementations Using a Meta-Model Architecture <i>G. N.C. Kirby, A. Dearle, S. J. Norcross</i></p> <p>Handling Nondeterminism in Multi-Tiered Distributed Architectures through Program Analysis <i>J. Slember, P. Narasimhan</i></p> <p>Discussion, Wrap up and Future Directions</p>
	<p>Workshop on Assurance Cases for Security: The Metrics Challenge</p> <p>Discussion Session</p>
16:30-23:30	Excursion to Stirling Castle

THURSDAY, JUNE 28

09:00-10:30	<p>DCCS 6A Critical Systems: Risk Analysis and Assurance</p> <p>Chair: Jean-Claude Laprie, LAAS-CNRS, France</p> <p>Confidence: Its Role in Dependability Cases for Risk Assessment <i>Robin Bloomfield, Bev Littlewood and David Wright, City University, London, UK</i></p> <p>Assurance Based Development of Critical Systems <i>Patrick Graydon, John Knight, University of Virginia, Charlottesville, VA, USA Elisabeth Strunk, The Aerospace Corporation, USA</i></p>
	<p>DCCS 6B Security Threats and Novel Detection</p> <p>Chair: Paulo Verissimo, University of Lisboa, Portugal</p> <p>Multiprocessors May Reduce System Dependability under File-based Race Condition Attacks <i>Jinpeng Wei and Calton Pu, Georgia Institute of Technology, Atlanta, GA, USA</i></p> <p>Understanding Resiliency of Internet Topology Against False Origin Attacks <i>Mohit Lad, Ricardo Oliveira, University of California, Los Angeles, CA, USA Beichuan Zhang, University of Arizona, Tucson, AZ, USA Lixia Zhang, University of California, Los Angeles, CA, USA</i></p> <p>User Discrimination through Structured Writing on PDAs <i>Rachel R. M. Roberts, Roy A. Maxion, Kevin S. Killourhy, and Fahd Arshad, Carnegie Mellon University, Pittsburgh, PA, USA</i></p>
	<p>PDS 6C Modeling and Evaluation</p> <p>Chair: Boudewijn Haverkort, University of Twente, Netherlands</p> <p>Variational Bayesian Approach for Interval Estimation of NHPP-based Software Reliability Models <i>Hiroyuki Okamura, Hiroshima University, Japan Michael Grottke, Duke University, Durham, NC, USA Tadashi Dohi, Hiroshima University, Japan Kishor Trivedi, Duke University, Durham, NC, USA</i></p> <p>Dynamic Fault Tree Analysis Using Input/Output Interactive Markov Chains <i>Hichem Boudali, Pepijn Couzen and Marielle Stoelinga, University of Twente, Netherlands</i></p> <p>Uniformity by Construction in the Analysis of Nondeterministic Stochastic Systems <i>Holger Hermanns and Sven Johr, Universität des Saarlandes, Saarbrücken, Germany</i></p>
	<p>Workshop on Dependable and Secure Nanocomputing</p> <p>Introduction to the Workshop</p> <p>Emerging Accidental Faults and Malicious Threats Moderator: Sudhakar M. Reddy, The University of Iowa, Iowa City, USA</p>

	<p>Manufacturing Process Variations and Dependability - A Contrarian View <i>Janak H. Patel, University of Illinois at Urbana-Champaign, USA</i></p> <p>Physically Secure Cryptographic Computations: From Micro to Nano Electronic Devices <i>Jean-Jacques Quisquater and François-Xavier Standaert, Université Catholique de Louvain, Belgium</i></p>
	<p>Industry Session 1</p> <p>Chair: Lisa Spainhower, IBM, USA</p> <p>The Industry Session at DSN 2007 will explore emerging technologies and challenges for dependability in the area of commercial computing, from the perspective of both customers and vendors. The session aims to augment synergy between academic researchers and industry practitioners.</p> <p>von Neumann Architecture and the Challenge to Problem Diagnosis <i>Alan Farrell, IBM System Availability Leader, Royal Bank of Scotland, UK</i></p> <p>Dependability Insights of a New Operating System <i>Brendan Murphy, Microsoft Research, UK</i></p>
10:30-11:00	<p>Coffee Break (Posters for Workshop on Dependable and Secure Nanocomputing will be on display)</p>
	<p>DCCS 7A Timing Model and Network Protocol</p> <p>Chair: Santosh Shrivastava, University of Newcastle, UK</p> <p>How to Choose a Timing Model? <i>Idit Keidar and Alexander Shraer, Technion, Haifa, Israel</i></p> <p>Electing an Eventual Leader in an Asynchronous Shared Memory System <i>Antonio Fernandez, Universidad Rey Juan Carlos, Móstoles, Spain, Ernesto Jimenez, Universidad Politécnica de Madrid, Madrid, Spain Michel Raynal, IRISA, Université de Rennes, Rennes, France</i></p> <p>Minimizing Response Time for Quorum-System Protocols over Wide-Area Networks <i>Florian Oprea and Michael Reiter, Carnegie Mellon University, Pittsburgh, PA, USA</i></p> <p>HyParView: A Membership Protocol for Reliable Gossip-based Broadcast <i>João Leitão, University of Lisbon, Portugal José Pereira, University of Minho, Braga, Portugal Luis Rodrigues, University of Lisbon, Portugal</i></p>
11:00-13:00	<p>DCCS 7B Security Protection: Algorithmic Approaches</p> <p>Chair: Nuno Neves, University of Lisboa, Portugal</p> <p>A Lightweight Mechanism for Dependable Communication in Untrusted Networks <i>Michael Rogers, UCL, London, UK Saleem Bhatti, University of St Andrews, St Andrews, UK</i></p> <p>Dynamic Cross-Realm Authentication for Multi-Party Web Service Interactions <i>Dacheng Zhang, Jie Xu, University of Leeds, UK Xianxian Li, Beihang University, China</i></p> <p>Enhancing DNS Resilience against Denial of Service Attacks <i>Vasileios Pappas, T.J. Watson Center IBM Research, Hawthorne, NJ, USA Dan Massey, Colorado State University, Fort Collins, CO, USA Lixia Zhang, University of California, Los Angeles, CA, USA</i></p> <p>Automatic Cookie Usage Setting with CookiePicker <i>Chuan Yue, Mengjun Xie and Haining Wang, College of William and Mary, Williamsburg, VA, USA</i></p>
	<p>PDS 7C Quality of Service and Error Recovery</p> <p>Chair: Arun Somani, Iowa State University, USA</p> <p>A Reinforcement Learning Approach to Automatic Error Recovery <i>Qijun Zhu, Tianjin University, Beijing, China Chun Yuan, Microsoft Research Asia, Beijing, China</i></p> <p>On the Quality of Service of Crash-Recovery Failure Detectors <i>Tiejun Ma, Jane Hillston and Stuart Anderson, University of Edinburgh, Edinburgh, UK</i></p> <p>E2EProf: Automated End-to-End Performance Management for Enterprise Systems <i>Sandip Agarwala, Fernando Alegre, Karsten Schwan, Georgia Institute of Technology, Atlanta, GA, USA Jegannathan Mehalingham, Delta Air Lines, Atlanta, GA, USA</i></p> <p>Bounding Peer-to-Peer Upload Traffic in Client Networks <i>Chun-Ying Huang and Chin-Laung Lei, National Taiwan University, Taipei, Taiwan</i></p>
	<p>Workshop on Dependable and Secure Nanocomputing</p>

	<p>From Transient Faults to Architectural Design Issues Moderator: Lorena Anghel, TIMA, Grenoble, France</p> <p>Environmental and Power-Induced Disturbances</p> <p>Impact of Intermittent Faults on Nanocomputing Devices Cristian Constantinescu, Advanced Micro Devices Corp., Forts Collins, CO, USA</p> <p>Judicious Choice of Waveform Parameters and Accurate Estimation of Critical Charge for Logic SER Palkesh Jain, Texas Instruments, Bangalore, India and Vivian Zhu, Texas Instruments, Dallas, TX, USA</p> <p>Time Redundancy Processor with the Tolerance to Transient Faults Caused by Electromagnetic Waves Makoto Kimura, Masayuki Arai, Satoshi Fukumoto, Kazuhiko Iwasaki, Tokyo Metropolitan University, Japan</p> <p>NBTI-Resilient Memory Cells with NAND Gates for Highly-Ported Structures Jaume Abella, Xavier Vera, Osman Unsal, Antonio González, Intel Barcelona Research Center, Intel Labs - UPC, Barcelona, Spain</p> <p>On-Line Testing and Chip-level Configurability</p> <p>A BIST Implementation Framework for Supporting Field Testability and Configurability in an Automotive SOC Amit Dutta, Srinivasulu Alampally, Arun Kumar, Rubin A. Parekhji, Texas Instruments, Bangalore, India</p> <p>Resilience through Self-Configuration in Future Massively Defective Nanochips Piotr Zajac, LAAS-CNRS and Université de Toulouse, France & Technical University of Lodz, Poland, Jacques Henri Collet, Jean Arlat and Yves Crouzet, LAAS-CNRS and Université de Toulouse, France</p> <p>FPGA Hardware Implementation of Statically-derived Application-aware Error Detectors Peter Klempner, University of Illinois at Urbana-Champaign, USA, Shelley Chen, SAIC, Champaign, IL, USA, Karthik Pattabiraman, Zbigniew Kalbarczyk and Ravishankar K. Iyer, University of Illinois at Urbana-Champaign, USA</p> <p>On-Line Self-Test of AES Hardware Implementations Giorgio Di Natale, Marie-Lise Flottes, Bruno Rouzeyre, LIRMM and Université de Montpellier, France</p>
	<p>Industry Session 2</p> <p>Chair: Lisa Spainhower, IBM, USA</p> <p>The Industry Session at DSN 2007, on emerging technologies and challenges for dependability in the area of commercial computing, continues with a Panel and Discussion:</p> <p><i>Providing a database of failure data for academic research - issues and next steps</i></p> <p>The panel will recap on the issues, feedback on the outcomes, and discuss next steps arising from the workshop on Reliability Analysis of System Failure Data held on March 1-2, 2007: this was a joint academic-industry investigation of ways and means to make real-failure industry data available to academic researchers.</p> <p>Panelists will include:</p> <p><i>Brendan Murphy, Microsoft Research, UK: Background</i> <i>Peter Carr, Sun Microsystems, UK: Data Collection</i> <i>Aad van Moorsel, Newcastle University, UK: Data Storage</i> <i>Neeraj Suri, TU Darmstadt, Germany: Data Analysis</i></p> <p>Closing presentation:</p> <p>Virtualization: An Inflection Point in High Availability Architecture Richard Harper, IBM Research, USA</p>
13:00-14:00	Lunch
14:00-15:30	<p>DCCS 8A Networking</p> <p>Chair: Douglas Blough, Georgia Institute of Technology, USA</p> <p>Greedy Receivers in IEEE 802.11 Hotspots Mi Kyung Han, Brian Overstreet and Lili Qiu, University of Texas at Austin, TX, USA</p> <p>Emergent Structure in Unstructured Epidemic Multicast Nuno Carvalho, Jose Pereira, Rui Oliveira, University of Minho, Braga, Portugal Luis Rodrigues, University of Lisbon, Portugal</p> <p>The Case for FEC-based Reliable Multicast in Wireless Mesh Networks Dimitrios Koutsonikolas and Y. Charlie Hu, Purdue University, West Lafayette, IN, USA</p>

DCCS 8B Experimental Dependability Assessment

Chair: Dong Tang, Sun Microsystems, USA

On the Selection of Error Model(s) For OS Robustness Evaluation

Andreas Johansson, Neeraj Suri, Darmstadt University of Technology, Germany *Brendan Murphy, Microsoft Research, Cambridge, UK*

Component Risk Assessment and Comparison Using Software Fault Injection

Regina Moraes, State University of Campinas, São Paulo, Brazil *João Durães, University of Coimbra, Portugal* *Ricardo Barbosa, Critical Software SA, Coimbra, Portugal* *Eliane Martins, State University of Campinas, São Paulo, Brazil* *Henrique Madeira, University of Coimbra, Portugal*

Foundations of Measurement Theory Applied to the Evaluation of Dependability Attributes

Andrea Bondavalli, Andrea Ceccarelli, Lorenzo Falai, University of Florence, Florence, Italy *Michele Vadursi, University of Naples "Parthenope," Naples, Italy*

PDS 8C Stochastic Modeling

Chair: Tadashi Dohi, University of Hiroshima, Japan

Performability Models for Multi-Server Systems with High-Variance Repair Durations

Imad Antonios, Southern Connecticut State University, New Haven, CT, USA and *Hans-Peter Schwefel, Center for Teleinfrastruktur Aalborg University, Aalborg, Denmark*

Computing Battery Lifetime Distributions

Lucia Cloth, Boudewijn R. Haverkort and Marijn Jongerden, University of Twente, Twente, Netherlands

Quantifying the Effectiveness of Mobile Phone Virus Response Mechanisms

Elizabeth Van Ruitenbeek, Tod Courtney, University of Illinois at Urbana-Champaign, IL, USA, *Fabrice Stevens, France Telecom Research, Issy les Moulineaux, France* and *William Sanders, University of Illinois at Urbana-Champaign, IL, USA*

[Workshop on Dependable and Secure Nanocomputing](#)

Panel "Emerging Hardware Technologies and Related Dependability & Security Challenges"

Moderator: Johan Karlsson, Chalmers University, Göteborg, Sweden

Panelists:

Jacob A. Abraham, University of Texas, Austin, TX, USA

Helena Handschuh, Spansion EMEA, Levallois-Perret, France

Takashi Nanya, University of Tokyo, Japan

Alex Orailoglu, University of California, San Diego, CA, USA

Posters about contributions in the 11:00-13:00 session and about those listed below will be on display during the 10:30-11:00 and 15:30-16:00 coffee breaks.

Identifying Fault Mechanisms and Models of Emerging Nanoelectronic Devices

Daniel Gil, David de Andrés, Juan-Carlos Ruiz, Pedro Gil, UPV, Valencia, Spain

On the Evaluation of Reliability of NanoFabric-based Architectures through Fault Simulation

Michelangelo Grosso, Maurizio Rebaudengo, Matteo Sonza Reorda, Politecnico di Torino, Italy

An Application-Specific Framework for Detecting Transient Faults in Processors

Srivaths Ravi, Texas Instruments, Bangalore, India

CNES Developments for COTS-based Spacecraft Supercomputers

Michel Pignol, CNES, Toulouse, France

Design and Test Techniques for Better Defect Screening and Improved Reliability in Automotive Integrated Circuits

Udayakumar H., Rubin A. Parekhji, Texas Instruments, Bangalore, India

Fast Abstracts 4

Chair : Robert Stroud, Newcastle University, UK

Local On-Line Maintenance of Scalable Pub/Sub Infrastructure

Alexander Shraer, Israel Institute of Technology, Gregory Chockler, IBM Haifa Research Labs, Idit Keidar, Israel Institute of Technology, Roie Melamed, Yoav Tock, IBM Haifa Research Labs, Roman Vitenberg, University of Oslo

Consistency Oriented Programming

P. M. Melliar-Smith, Louise E. Moser, University of California, Santa Barbara

Fault Tolerant ARIMA-based Aggregation of Data in Sensor Networks

Douglas Herbert, Gaspar Modelo Howard, Carlos Perez-Toro, Saurabh Bagchi, Purdue University

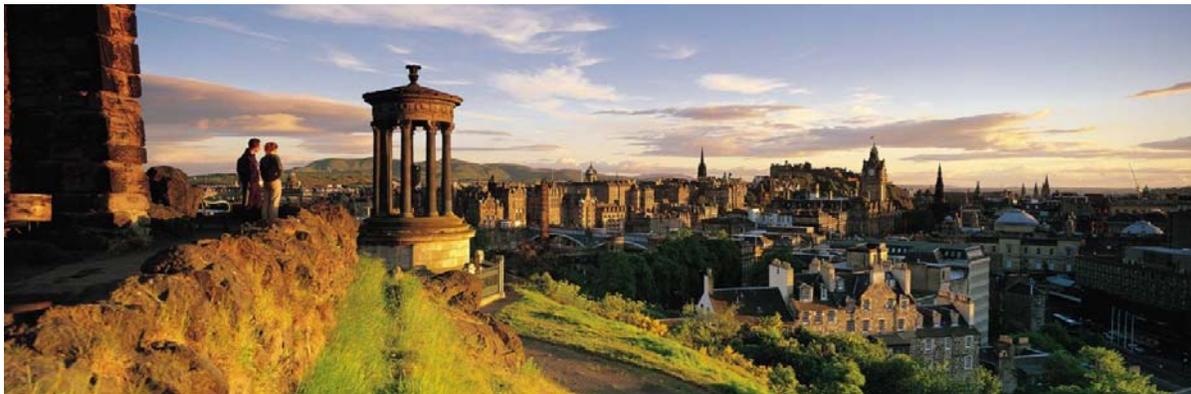
A Case for Virtual Machine-Based Availability Management

Rick Harper, Lisa Spainhower, IBM

How the Time-Before-Failure Reacts to Periodic Rejuvenation

Shah Asaduzzaman, Muthucumaru Maheswaran, McGill University

	<p>Lightweight Reliable Communications Library for High-Performance Embedded Space Applications <i>John Wernsing, Jason Ling, Grzegorz Cieslewski, Alan D. George, University of Florida</i></p> <p>Building a Thesaurus and an Ontology of the Concepts of Dependability and Security <i>Algirdas Avizienis, Vytautas Magnus University, Oliver Culo, Institute for Applied Information Research, Gintare Grigonyte, Ruta Marcinkeviciene, Vytautas Magnus University</i></p> <p>Back in a Flash! - Fast Recovery using Non-Volatile Memory <i>Jeffrey C. Carlyle, Francis M. David, Roy H. Campbell, University of Illinois at Urbana-Champaign</i></p> <p>Transaction Dependency Graph Construction using Signal Injection <i>Shuyi Chen, Kaustubh R. Joshi, University of Illinois at Urbana-Champaign, Matti A. Hiltunen, AT&T Labs Research, William H. Sanders, University of Illinois at Urbana-Champaign, Richard D. Schlichting, AT&T Labs Research</i></p> <p>Detecting DoS Attacks for Web Server Based on Transductive Scheme <i>Yang Li, Chinese Academy of Sciences</i></p> <p>Dependability Evaluation of Wireless Sensor Network: a Hybrid Simulation Tool <i>Marcello Cinque, Domenico Cotroneo, Catello Di Martino, Stefano Russo, Universita' di Napoli Federico II</i></p>
15:30-16:00	<p>Coffee Break (Posters for Workshop on Dependable and Secure Nanocomputing will be on display)</p>
16:00-18:00	<p>IEEE Technical Committee on Dependable Computing and Fault Tolerance Business Meeting (all delegates are invited and welcome to attend)</p>



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