# Final Program

## Monday, June 22nd

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| **08:00 – 09:00** | *Registration* | | | | |

| **09:00 – 10:30** | **WS1: Recent Advances in the Dependabllity AssessmeNt of Complex systEms (RADIANCE)**<br>**Room: Copacabana A**<br><br>**Keynote presentation**: *"Challenges in Engineering Dependable Self-Adaptive System"*<br>**Speaker: Bradley Schmerl** (Carnegie-Mellon Universtiy, USA)<br>**Chair: Ariadne Carvalho**<br><br>**Session #1 – Security and Dependability Analysis**<br>**Chair: András Zentai**<br><br>**Service Deterioration Analysis (SDA): An Early Development Phase Dependability Analysis Method**<br>Georg Macher, Andrea Höller, Harald Sporer (Graz University of Technology), Eric Armengaud (AVL List GmbH) and Christian Kreiner (Graz University of Technology) | **WS2: Safety and Security of Intelligent Vehicles (SSIV)**<br>**Room : Copacabana B**<br><br>**Welcome**<br><br>**Session #1 – Safety and Security of Intelligent Vehicles**<br>**chair: João Carlos Cunha**<br><br>**Keynote Presentation. "On the Security of Critical Cyber-Physical Systems"**<br>**Speaker: Roberto Gallo** (KRIPTUS and University of Campinas )<br><br>**Using data integrity as an improvement characteristic to assess the safety of ADS-B-based systems.**<br>Daniel Baraldi Sesso, Lucio F. Vismari, Antonio V. Silva Neto, Paulo Sérgio Cugnasca and João Batista Camargo Jr. (University of S.Paulo) | **WS3: Model Based Design for Cyber-Physical Systems (MB4CP)**<br>**Room : Mar Azul**<br><br>**Chairs: Alberto Avritzer and Sahra Sedighsarvestani**<br><br>**Keynote presentation**: *Dependability modeling and analysis methods integrated in model-driven industrial architectural frameworks"*<br>**Speaker: Andrea Bondavalli** (University of Florence)<br><br>*Keynote Presentation. "Resilience of Cyber-Physical Energy Systems: the devil is in the models"*<br>**Speaker: Paulo Esteves Veríssimo** (Université du Luxembourg) | **Tutorial 1**<br>**Room : Guaratiba**<br><br>Mitigation of Soft Errors: From Adding Selective Redundancy to Changing the Abstraction Stack<br>Luigi Carro and Álvaro Moreira and Paolo Rech<br>(Federal University of Rio Grande do Sul) | **Tutorial 2**<br>**Room : Pontal**<br><br>Disaster Recovery for Enterprise-Class Clouds<br>Rick Harper, Hari Ramasamy and Long Wang<br>(IBM TJ Watson Research Center)<br>Mahesh Viswanathan<br>(IBM Cloud Managed Services) |
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| **10:30 – 11:00** | *Break* | | | | |

| **11:00 – 12:30** | **WS1: RADIANCE (Cont'd)**<br><br>**Quantifying the Impact of External Attacks on a Distributed Automatic Track Warning System.**<br>Leonardo Montecchi, Paolo Lollini and Andrea Bondavalli (University of Florence)<br><br>*Session #2 – Agile Development and Natural Language Requirements*<br>*Chair: Cecília Rubira*<br><br>**An Approach to Clustering and Sequencing Textual Requirements**<br>Ricardo Barbosa, Daniele Januario, A. E. A. Silva, Paulo S. Martins and Regina Moraes (University of Campinas) | **WS2: SSIV (Cont'd)**<br>**Session #2 – Collision avoidance and control on automotive and aerial vehicles**<br>**chair: João Moreira**<br><br>**A learning-based autonomous control system approach for collision avoidance within an unmanned aircraft**.<br>Thiago Toshio Matsumoto, Lucio Flavio Vismari, Ricardo Alexandre Veiga Gimenes, Jorge Rady De Almeida Jr and João Batista Camargo Jr. (University of S.Paulo)<br>**Using Simulation, Fault Injection and Property-Based Testing to Evaluate Collision Avoidance of a Quadcopter System.**<br>Benjamin Vedder, Jonny Vinter (SP Technical Research Institute of Sweden) and Magnus Jonsson. (Halmstad University) | **WS3: MB4CP (Cont'd)**<br><br>*Panel Session: The State of the Art on Model-based Methodologies for Cyber-Physical Systems*<br>*Paulo Esteves Veríssimo (Université du Luxembourg), Andrea Bondavalli (University of Florence), Sahra Sedigh Sarvestani (Missouri University of Science & Technology), Alberto Avritzer (Siemens Corporation, Princeton)* | **Tutorial 1 (Cont'd)**<br><br>Mitigation of Soft Errors: From Adding Selective Redundancy to Changing the Abstraction Stack<br>Luigi Carro and Álvaro Moreira and Paolo Rech<br>(Federal University of Rio Grande do Sul) | **Tutorial 2 (Cont'd)**<br><br>Disaster Recovery for Enterprise-Class Clouds<br>Rick Harper, Hari Ramasamy and Long Wang<br>( IBM TJ Watson Research Center)<br>Mahesh Viswanathan<br>(IBM Cloud Managed Services) |

# The 45th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN-2015) — Preliminary Program

## Monday, June 22nd

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| **Semi-Automatic Generation of Extended Finite State Machines from Natural Language Standard Documents.**<br>Juliana Galvani Greghi, Eliane Martins and Ariadne M. B. R. Carvalho (University of Campinas) | **Advantages in Crash Severity Prediction using Vehicle to Vehicle Communication.**<br>Dennis Böhmländer, Sinan Hasirlioglu (Technische Hochschule Ingolstadt), Vitor Yano (University of Campinas), Christian Lauerer, Thomas Brandmeier (Technische Hochschule Ingolstadt), and Alessandro Zimmer (Federal University of Paraná)<br>**Adaptive Control System for a Fixed Wing UAV with Reduced Control Surfaces based on ANFIS.**<br>Ian Esper and Paulo Rosa (Instituto Militar de Engenharia) | | | |

**12:30 – 14:00** — Lunch

| WS1: RADIANCE (Cont'd)<br>Room : Copacabana A | WS2: SSIV (Cont'd)<br>Room : Copacabana B | WS4: Software-Defined Networks and Network Function Virtualization (DISN)<br>Room : Mar Azul | Tutorial 3<br>Room : Guaratiba | Tutorial 4<br>Room : Samambaia |
|---|---|---|---|---|
| *Session #3 – Safety Assessment in Industrial Systems*<br>*Chair: Taisy Weber*<br><br>**An asset-based development approach for availability and safety analysis on a flood alert system.**<br>Fumio Machida (NEC Corporation), Jianwen Xiang (Wuhan University of Technology), Shigeru Hosono (NEC, Service Platforms Research Laboratories) and Kumiko Tadano (NEC Corporation)<br>**Cost Prediction for V&V and Certification Processes.**<br>Francesco Brancati (Resiltech), András Pataricza (Budapest University of Technology and Economics) , Nuno Silva (Critical Software SA), Ábel Hegedüs, Laszlo Gonczy (Budapest University of Technology and Economics) , Andrea Bondavalli (University of Florence) and Rosaria Esposito (Resiltech)<br>**Assessment of Defect Type influence in Complex and Integrated Space Systems.**<br>Nuno Silva (Critical Software SA), Marco Vieira (University of Coimbra), Dario Ricci and Domenico Cotroneo (University of Naples Federico II) | Session #3 – Design issues for autonomous cooperating objects<br>Chair: António Casimiro<br><br>**Keynote Presentation**: *"From Embedded Systems to Autonomous Cooperating Objects: a long journey"*<br>*Speaker: Paulo Veríssimo* (Université du Luxembourg)<br><br>**Model-based Membership Verification in Vehicular Platoons.**<br>Mikael Asplund. (Linköping University)<br><br>**Software Faults Emulation at Model-Level: Towards Automated Software FMEA.**<br>Valentina Bonfiglio, Leonardo Montecchi (University of Florence), Ivano Irrera (University of Coimbra), Francesco Rossi (ResilTech s.r.l.), Paolo Lollini and Andrea Bondavalli (University of Florence) | *Opening*<br><br>**Keynote presentation**: *Software Network Security*<br>*Speaker: Otto C. M. B. Duarte* (Federal University of Rio de Janeiro)<br><br>*Technical Session #1*<br>*SeReNe: On Establishing Secure and Resilient Networking Services for an SDN-based Multi-Tenant Datacenter Environment*<br>Chun-Jen Chung, Tianyi Xing and Dijiang Huang (Arizona State University), Deep Medhi (University of Missouri-Kansas City), Kishor Trivedi (Duke University)<br>*Video on Demand Hosted on Private Clouds: Availability Modeling and Sensitivity Analysis*<br>Rosangela Melo, Maria Clara Bezerra, Jamilson Dantas, Rubens Matos, Ivanildo Melo, Paulo Macial (Federal University of Pernambuco) | Techniques and Tools to Defend against Web Application's Software Vulnerabilities<br>Nuno Antunes and Marco Vieira (University of Coimbra) | Cyber-Physical Control Systems: Vulnerabilities, Threats and Mitigations<br>Saman Zonouz (Rutgers University)<br>Katherine Davis (Information Trust Institute, University of Illinois at Urbana-Champaign) |

**14:00 – 15:45**

**15:45 – 16:15** — *Break*

## Monday, June 22nd

| | WS1: RADIANCE (Cont'd) | WS2: SSIV (Cont'd) | WS4: DISN (Cont'd) | Tutorial 3 (Cont'd) | Tutorial 4 (Cont'd) |
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| **16:15 – 18:00** | *Session #4 – Fault Injection for Complex Systems*<br>*Chair: Henrique Madeira*<br><br>**A Virtual Fault Injection Framework for Reliability-Aware Software Development.** Andrea Höller, Georg Macher, Tobias Rauter, Johannes Iber and Christian Kreiner (Graz University of Technology)<br>**Towards assessing representativeness of fault injection-generated Failure Data for Online Failure Prediction.** Ivano Irrera and Marco Vieira (University of Coimbra)<br>*Studying the Propagation of Failures in SOAs.* Cristiana Areias, João Carlos Cunha (Instituto Politécnico de Coimbra, ISEC,DEIS) and Marco Vieira (University of Coimbra) | **Session #4 – Automotive safety through environment awareness**<br>**Chair: Jonny Vinter**<br><br>**The use of a Graphic Processing Unit (GPU) in a Real Time Visual Odometry Application.** Jaime Armando Delgado Vargas and Paulo Roberto Gardel Kurka (University of Campinas).<br>**Improving Intelligent Vehicle Dependability By Means of InfrastructureInduced Tests.** Wilfried Steiner, Ayhan Mehmed (TTTech Computertechnik AG, Austria) and Sasikumar Punnekkat (Mälardalen University).<br><br>**Panel Session**<br>**chair: Johan Karlsson**<br><br>*Challenges, current solutions and research directions regarding safety and security of intelligent vehicles*<br>*Paulo Veríssimo, Roberto Gallo, Andrea Bondavalli, João Moreira*<br><br>*Closing Session* | *Technical Session #2*<br>**Implementation of a Failure Detector Based on Network Function Virtualization** Rogerio Turchetti and Elias P. Duarte Jr. (Federal University of Parana)<br><br>*Keynote presentation: NetPaxos: Consensus at Network Speed*<br>*Speaker: Robert Soule* (University of Lugano)<br><br>*Closing* | Techniques and Tools to Defend against Web Application's Software Vulnerabilities<br>Nuno Antunes and Marco Vieira (University of Coimbra) | Cyber-Physical Control Systems: Vulnerabilities, Threats and Mitigations<br>Saman Zonouz (Rutgers University)<br>Katherine Davis (Information Trust Institute, University of Illinois at Urbana-Champaign) |
| **18:30 – 20:30** | *Welcome Reception* | | | | |

# The 45th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN-2015) — Preliminary Program

## Tuesday, June 23rd

| Time | | | |
|---|---|---|---|
| 08:00 – 09:00 | *Registration* | | |
| 09:00 – 09:30 | **Welcome Address and Jean-Claude Laprie Award Ceremony**<br>**Room: Copacabana B** | | |
| 09:30 – 11:00 | **Best Paper Award Session**<br>**Chair: Yair Amir**<br><br>**Room: Copacabana B**<br><br>• **Leveraging State Information for Automated Attack Discovery in Transport Protocol Implementations**<br>Samuel Jero, Hyojeong Lee, Cristina Nita-Rotaru (Purdue University)<br>• **Δ-encoding: Practical Encoded Processing**<br>Dmitrii Kuvaiskii, Germany, Christof Fetzer (Technische Universität Dresden)<br>• **Measuring and Understanding Extreme-Scale Application Resilience: A Field Study of 5,000,000 HPC Application Runs**<br>Catello Di Martino, Zbigniew Kalbarczyk, William Kramer, Ravishankar K. Iyer (University of Illinois at Urbana-Champaign) | | |
| 11:00 – 11:30 | *Break* | | |
| 11:30 – 12:30 | **TS1A: Large-Scale Systems**<br>**Chair: Alan Wood**<br><br>**Room : Copacabana A**<br><br>**Understanding and Exploiting Spatial Properties of System Failures on Extreme-Scale HPC Systems**<br>Saurabh Gupta, Devesh Tiwari, Christopher Jantzi, James Rogers, Don Maxwell (Oak Ridge National Laboratory)<br>**Detection of Early-Stage Enterprise Infection by Mining Large-Scale Log Data**<br>Alina Oprea, Zhou Li (RSA Laboratories),Ting-Fang Yen (E8 Security), Sang H. Chin (Draper Laboratory and Boston University), Sumayah Alrwais (Indiana University) | **TS1B: Attack Mitigation**<br>**Chair: Marco Vieira**<br><br>**Room : Copacabana B**<br><br>**LEAPS: Detecting Camouflaged Attacks with Statistical Learning Guided by Program Analysis**<br>Zhongshu Gu, Kexin Pei, Qifan Wang, Luo Si, Xiangyu Zhang, Dongyan Xu (Purdue University)<br>**OnionBots: Subverting Privacy Infrastructure for Cyber Attacks**<br>Amirali Sanatinia, Guevara Noubir (Northeastern University) | **TS1C: Modeling and Metrics**<br>**Chair: Karama Kanoun**<br><br>**Room: Mar Azul**<br><br>**A Statistical Approach for Timed Reachability in AADL Models**<br>Harold Bruintjes, Joost-Pieter Katoen (RWTH Aachen University), David Lesens (Airbus Defence and Space)<br>**Scalable Analysis of Fault Trees with Dynamic Features**<br>Jan Krčál, Saarland (University), Pavel Krčál (Lloyd's Register Consulting and Uppsala University) |
| 12:30 – 14:00 | *Lunch* | | |
| 14:00 – 15:30 | **TS2A: Secure Execution**<br>**Chair: Gilles Muller**<br><br>**Room: Copacabana A**<br><br>**The Power of Evil Choices in Bloom Filters**<br>Thomas Gerbet (Université Joseph Fourier), Amrit Kumar, Cédric Lauradoux (INRIA)<br>**Secure Dynamic Software Loading and Execution using Cross Component Verification**<br>Byungho Min, Vijay Varadharajan (Macquarie University)<br>**Parallax: Implicit Code Integrity Verification Using Return-Oriented Programming**<br>Dennis Andriesse, Herbert Bos, Asia Slowinska (VU University Amsterdam) | **TS2B: Storage Systems**<br>**Chair: Neeraj Suri**<br><br>**Room: Copacabana B**<br><br>**TIP-code: A Three Independent Parity Code to Tolerate Triple Disk Failures with Optimal Update Complexity**<br>Yongzhe Zhang, Chentao Wu, Jie Li, Minyi Guo (Shanghai Jiao Tong University and University of Tsukuba)<br>**Enabling Efficient and Reliable Transition from Replication to Erasure Coding for Clustered File Systems**<br>Runhui Li, Yuchong Hu, Patrick P. C. Lee (The Chinese University of Hong Kong)<br>**Grouping-based Elastic Striping with Hotness Awareness for Improving SSD RAID Performance**<br>Yubiao Pan, Yongkun Li, Yinlong Xu, Zhipeng Li (University of Science & Technology of China) | **TS2C: Web Services**<br>**Chair: Fernando Pedone**<br><br>**Room: Mar Azul**<br><br>**Joza: Hybrid Taint Inference for Defeating Web Application SQL Injection Attacks**<br>Abbas Naderi-Afooshteh, Anh Nguyen-Tuong, Mandana Bagheri-Marzijarani, Jason D. Hiser, Jack W. Davidson (University of Virginia)<br>**Private Browsing Mode Not Really That Private: Dealing with Privacy Breaches Caused by Browser Extensions**<br>Bin Zhao, Peng Liu (The Pennsylvania State University)<br>**Test-based Interoperability Certification for Web Services**<br>Ivano Alessandro Elia, Nuno Laranjeiro, Marco Vieira (University of Coimbra) |

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| Tuesday, June 23rd | | |
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| **15:30 – 16:00** | *Break* | |
| **16:00 – 17:30** | **TS3A: Data Clusters, Servers and Clouds**<br>**Chair: Zbigniew Kalbarczyk**<br>**Room: Copacabana A**<br><br>**Understanding the Dark Side of Big Data Clusters: An Analysis beyond Failures**<br>Andrea Rosà (Università della Svizzera Italiana), Lydia Y. Chen (IBM Research Lab. Zurich), Walter Binder (Università della Svizzera Italiana)<br>**Improving Reliability with Dynamic Syndrome Allocation in Intelligent Software Defined Data Centers**<br>Ulya Bayram, Eric W.D. Rozier (University of Cincinnati), Dwight Divine (University of Illinois), Pin Zhou (Datos IO, Inc.)<br>**Experiences with Building Disaster Recovery for Enterprise-Class Clouds**<br>Long Wang, Harigovind V. Ramasamy, Richard E. Harper (IBM T. J. Watson Research Center), Mahesh Viswanathan (IBM Cloud), Edmond Plattier (IBM Global Technology Services) | **TS3B: Attack Prevention**<br>**Chair: Shivakant Mishra**<br>**Room: Copacabana B**<br><br>**FloodGuard: A DoS Attack Prevention Extension in Software-Defined Networks**<br>Haopei Wang, Lei Xu, GuofeiGu (Texas A&M University)<br>**Enhancing Software Dependability and Security with Hardware Supported Instruction Address Space Randomization**<br>Seung Hun Kim (Yonsei University), Lei Xu, Ziyi Liu (University of Houston), Zhiqiang Lin (The University of Texas at Dallas), Won Woo Ro (Yonsei University), Weidong Shi (University of Houston)<br>**Hide & Share: Landmark-based Similarity for Private KNN Computation**<br>Davide Frey (INRIA Rennes), Rachid Guerraoui (EPFL), Anne-Marie Kermarrec, Antoine Rault (INRIA Rennes), François Taïani (University of Rennes 1), Jingjing Wang (EPFL) | **TS3C: Modeling and Assessment**<br>**Chair: Felicita Di Giandomenico**<br>**Room: Mar Azul**<br><br>**Energy Resilience Modeling for Smart Houses**<br>Hamed Ghasemieh, Boudewijn R. Haverkort, Marijn R. Jongerden, Anne Remke (University of Twente and University of Münster)<br>**Impact of Malfunction on the Energy Efficiency of Batch Processing Systems**<br>Marcello Cinque, Domenico Cotroneo, Flavio Frattini, Stefano Russo (Università degli Studi di Napoli Federico II)<br>**phpSAFE: A Security Analysis Tool for OOP Web Application Plugins**<br>Paulo Nunes, José Fonseca (University of Coimbra and Polytechnic Institute of Guarda), Marco Vieira (University of Coimbra) |

| Wednesday, June 24th | |
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| **08:30 – 10:00** | **Keynote Speech 1**<br>**System security after Snowden**<br>**Bart Preneel (Katholieke Universiteit Leuven, Belgium)**<br>**Chair: Mohamed Kaaniche**<br>**Room : Copacabana B** |
| **10:00 – 10:30** | **IEEE Technical Innovation Award Ceremony**<br>**Room: Copacabana B** |
| **10:30 – 11:00** | *Break* |

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## Wednesday, June 24th

| | TS4A: Mitigation of Hardware Faults<br>Chair: Henrique Madeira<br>Room: Copacabana A | TS4B: Mobile Devices<br>Chair: Domenico Cotroneo<br>Room: Copacabana B | Fast Abstracts I<br>chair: Fernando Pedone<br>Room: Mar Azul |
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| 11:00 – 12:30 | **BAAT: Towards Dynamically Managing Battery Aging in Green Datacenters**<br>Longjun Liu (Xi'an Jiaotong University, China and University of Florida), Chao Li (Shanghai Jiao Tong University), Hongbin Sun (Xi'an Jiaotong University), Yang Hu, Juncheng Gu, Tao Li (University of Florida)<br>**Avoiding Pitfalls in Fault-Injection Based Comparison of Program Susceptibility to Soft Errors**<br>Horst Schirmeier, Christoph Borchert, Olaf Spinczyk (Technische Universität Dortmund)<br>**Warped-RE: Low-Cost Error Detection and Correction in GPUs**<br>Mohammad Abdel-Majeed, Waleed Dweik, Hyeran Jeon, Murali Annavaram (University of Southern California) | **Decomposable Trust for Android Applications**<br>Earlence Fernandes, AjitAluri, Alexander Crowell, Atul Prakash (University of Michigan)<br>**Reducing Refresh Power in Mobile Devices with Morphable ECC**<br>Chiachen Chou, Prashant Nair, Moinuddin K. Qureshi (Georgia Institute of Technology)<br>**TrustICE: Hardware-assisted Isolated Computing Environments on Mobile Devices**<br>He Sun (Chinese Academy of Science and College of William and Mary), Kun Sun (College of William and Mary), Yuewu Wang (Chinese Academy of Science), Jiwu Jing (Chinese Academy of Science), Haining Wang (University of Delaware) | **Fault-Tolerant Clock Synchronization Protocol in Multi-Ring Topologies**<br>Klaus Echtle, Zoha Moztarzadeh (University of Duisburg-Essen)<br>**Proactive Dependability Framework for Smart Environment Applications**<br>Ehsan Ullah Warriach, Tanir Ozcelebi, Johan Lukkien (Eindhoven University of Technology)<br>**Adaptive Dynamic Software Diversity: Towards Feedback-Based Resilience**<br>Andrea Höller, Tobias Rauter, Johannes Iber, Christian Kreiner (Graz University of Technology)<br>**A System-Level Solution for Dependable Heterogeneous MPSoCs**<br>Ahmed Ibrahim, Hans Kerhoff (University of Twente)<br>**Why Phishing becomes a Precursor to Brutal Cyber Attacks? Comparative Evaluation Framework of Mitigation Approaches**<br>Mansour Alsaleh, Abdulrahman Alarifi (Communication and Information Technology Research Institute, King Abdulaziz City for Science and Tec)<br>**New Techniques for Streaming Authenticated Data Structures**<br>Chia-Mu Yu (Yuan Ze University), Shin-Ying Huang, Yennun Huang (Academia Sinica)<br>**Challenges of Assessing the Hypercall Interface Robustness**<br>Diogo Carvalho, Nuno Antunes, Marco Vieira (University of Coimbra), Aleksandar Milenkoski (University of Würzburg), Samuel Kounev (University of Würzburg) |
| 12:30 – 14:00 | | *Lunch* | |

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## Wednesday, June 24th

| 14:00 – 15:30 | **TS5A: Network Security and Consensus**<br>**Chair: Elias Duarte**<br>**Room: Copacabana A** | **TS5B: Memory Errors**<br>**Chair: Murali Annavaram**<br>**Room: Copacabana B** | **Fast Abstracts II**<br>**Chair: Raimundo Macêdo**<br>**Room: Mar Azul** |
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| | **Delving into Internet DDoS Attacks by Botnets: Characterization and Analysis**<br>An Wang (George Mason University), Aziz Mohaisen (Verisign Labs), Wentao Chang, Songqing Chen (George Mason University)<br>**Consensus Refined**<br>Ognjen Marić, Christoph Sprenger, David Basin (ETH Zurich)<br>**Segugio: Efficient Behavior-Based Tracking of Malware-Control Domains in Large ISP Networks**<br>Babak Rahbarinia (University of Georgia), Roberto Perdisci, Manos Antonakakis (University of Georgia and Georgia Institute of Technology) | **Revisiting Memory Errors in Large-Scale Production Data Centers: Analysis and Modeling of New Trends from the Field**<br>Justin Meza, Qiang Wu, Sanjeev Kumar, Onur Mutlu (Carnegie Mellon University and Facebook, Inc.)<br>**AVATAR: A Variable-Retention-Time (VRT) Aware Refresh for DRAM Systems**<br>Moinuddin K. Qureshi, Dae-Hyun Kim, Samira Khan, Prashant J. Nair, Onur Mutlu (Carnegie Mellon University and Georgia Institute of Technology)<br>**Read Disturb Errors in MLC NAND Flash Memory: Characterization, Mitigation and Recovery**<br>Yu Cai, Yixin Luo, Saugata Ghose, Onur Mutlu (Carnegie Mellon University) | **Optimal Control vs. Safety Red Lines: Internet-Of-Things Safety via Micro-Policies**<br>Saman Zonouz (Rutgers University), Robin Berthier (University of Illinois at Urbana Champaign)<br>**Distributed Instrumentation & Control (I&C) architecture: Design and Validation**<br>Patrick Salaun (Electricite de France), Marion Viel (EDF), Thibault Lemattre (EDF R&D), Jean-Francois Petin (CRAN), Thomas Robert (TPT)<br>**Cyber Safety: Making Internet Dependable for Users**<br>Shivakant Mishra (University of Colorado)<br>**A methodology for automatic generation of dependability model for industrial processes based on Ontologies and Bayesian Networks**<br>Allan Venceslau, Raphaela Galhardo Fernandes, Luiz Guedes, Ivanovitch Silva (Universidade Federal do Rio Grande do Norte)<br>**Locating Stuck-at Error in Quantum Boolean Circuits**<br>Ting-Hsu Chang (National Taiwan University), Chia-Mu Yu (Yuan Ze University), Wei-Ho Chung (Academia Sinica), Sy-Yen Kuo (National Taiwan University)<br>**Implementation and evaluation of Collision-fast Atomic Broadcast protocols**<br>Rodrigo Saramago (Federal University of Uberlândia), Lasaro Camargos (Federal University of Uberlandia)<br>**An Ontological Model for Constructing Mobius ADVISE Security Models**<br>Brett Feddersen, Ken Keefe, William H. Sanders (University of Illinois at Urbana-Champaign), Carol Muehrcke, Donald Parks (Cyber Defense Agency), Andrew Crapo, Alfredo Gabaldon, Ravi Palla (General Electric Global Research) |
| 15:30 – 16:00 | *Break* | | |
| 16:00 – 19:30 | **Excursion** | | |
| 19:30 – 22:00 | **Banquet**<br>**Best Paper and Carter Award Ceremony** | | |

# The 45th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN-2015) — Preliminary Program

| | Thursday, June 25th |
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| **08:30 – 10:00** | **Keynote Speech 2**<br>**Information Technology in Brazil – Strategic Opportunities for Research and Innovation**<br>**Virgílio Augusto Fernandes Almeida (University of Minas Gerais, Brazil)**<br>**Chair: Regina Moraes**<br>**Room: Copacabana B** |
| **10:00 – 10:30** | *Break* |

| | **TS6A: Fault Tolerance**<br>**Chair: Wyatt Lloyd**<br>**Room: Copacabana A** | **TS6B: Vulnerability Detection and Mitigation**<br>**Chair: Paulo Veríssimo**<br>**Room: Copacabana B** | **Industrial Track**<br>**Room: Mar Azul** |
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| **10:30 – 12:00** | **Fine-Grained Characterization of Faults Causing Long Latency Crashes in Programs**<br>Guanpeng Li, Qining Lu, Karthik Pattabiraman (University of British Columbia, Vancouver)<br>**User-Constraint and Self-Adaptive Fault Tolerance for Event Stream Processing Systems**<br>André Martin, Tiaraju Smaneoto, Tobias Dietze, Andrey Brito, Christof Fetzer (Technische Universität Dresden and Universidade Federal de Campina Grande)<br>**Lightweight Memory Checkpointing**<br>Dirk Vogt, Cristiano Giuffrida, Herbert Bos, Andrew S. Tanenbaum (VU University Amsterdam) | **HeapTherapy: An Efficient End-to-end Solution against Heap Buffer Overflows**<br>Qiang Zeng, Mingyi Zhao, Peng Liu (The Pennsylvania State University)<br>**Smart-TV Security Analysis: Practical Experiments**<br>Yann Bachy (LAAS-CNRS, INSA de Toulouse and Thales Communications & Security), Frédéric Basse (Thales Communications & Security), Vincent Nicomette, Eric Alata (LAAS-CNRS and INSA de Toulouse), Mohamed Kaâniche (LAAS-CNRS and Univ. de Toulouse), Jean-Christophe Courrège (Thales Communications & Security), Pierre Lukjanenko (LAAS-CNRS)<br>**On the Metrics for Benchmarking Vulnerability Detection Tools**<br>Nuno Antunes, Marco Vieira (University of Coimbra) | **Keynote Presentation: Analytics for Maintenance Services.**<br>**Speaker: Harigovind Ramasamy** *(IBM T.J. Watson Research Center, USA)*<br>**Chair : Ravi Iyer**<br><br>**Presentations**<br>**Chair : Fátima Mattiello Francisco**<br><br>**Mercury: An Integrated Environment for Performance and Dependability Evaluation of General Systems.** Bruno Silva, Rubens Matos, Gustavo Callou, Jair Figueiredo, Danilo Oliveira, Joao Ferreira, Jamilson Dantas, Aleciano Lobo, Vandi Alves and Paulo Maciel (Federal Rural University of Pernambuco, Federal University of Pernambuco)<br>**Gradual Migration of Legacy Software to the Cloud: a Telco OSS Case Study.** Klaus Raizer, Joana Malaverri, Lin T. Li, Eliane Z. V. Dias and Cláudia (Centro de Pesquisa e Desenvolvimento em Telecomunicações)<br>**From Academia to Industry: Challenges and Lessons Learned from a Model-Based-Testing Experience.** Emília Villani (Instituto Tecnológico de Aeronáutica), Ana Maria Ambrosio (National Institute for Space Research), Thiago Dutra, Marcus V. O. Araújo (FIAT), Eliane Martins (University of Campinas)<br>**Safety Assessment of Complex Automatic Train Control System: The Experience of Sao Paulo Metro.** R.N. Borloni, F.T. Alves (Companhia do Metropolitano de São Paulo, Brazil), V.F. Avelino, L.F. Vismari, , J.B. Camargo Jr (University of S. Paulo)<br>**Dependability Analysis using STPA Step foward from academia to industry.** Synara R Gomes Medeiros, Marcelo J. Ruv, Carlos Henrique Netto Lahoz (Embraer, Instituto de Aeronautica e Espaco)<br>**Thinking outside the vehicle: the impact of connected vehicles on safety and security.** Davide Iacono, Francesco Brancati, Francesco Rossi, Andrea Bondavalli (Resiltech srl) |
| **12:00 – 13:30** | *Lunch* | | |

# The 45th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN-2015) — Preliminary Program

## Thursday, June 25th

| 13:30 – 15:00 | **TS7A: Assurance of Complex Systems**<br>**Chair: William H. Sanders**<br>**Room: Copacabana A**<br><br>**Formal Assurance Arguments: A Solution In Search of a Problem?**<br>Patrick John Graydon (Mälardalen University, Västerås, now at NASA Langley Research Center)<br>**A Quality Control Engine for Complex Physical Systems**<br>Haifeng Chen, Mizoguchi Takehiko, Yan Tan, Kai Zhang, Geoff Jiang (NEC Laboratories America)<br>**Discovering and Visualizing Operations Processes with POD-Discovery and POD-Viz**<br>Ingo Weber, Chao Li, Xiwei Xu, Liming Zhu (SSRG, NICTA and University of New South Wales) | **TS7B: Preventing Memory and Information Leakage**<br>**Chair: Catello Di Martino**<br>**Room : Copacabana B**<br><br>**Incinerator – Eliminating Stale References in Dynamic OSGi Applications**<br>Koutheir Attouchi (Orange Labs), Gaël Thomasy (Telecom SudParis), Gilles Muller, Julia Lawall (Inria/LIP6/UPMC/Sorbonne University), André Bottaro (Orange Labs)<br>**Risk Assessment of Buffer "Heartbleed" Over-read Vulnerabilities**<br>Jun Wang, Mingyi Zhao, Qiang Zeng, Dinghao Wu, Peng Liu (The Pennsylvania State University) | **Student Forum**<br>**chair: Andrea Bondavalli**<br>**Room: Mar Azul**<br><br>**Timely, Reliable, and Cost-effective Transport Service using Dissemination Graphs**<br>Amy Babay (Johns Hopkins University)<br>**Multi-Layer Anomaly Detection in Complex Dynamic Critical Systems**<br>Tommaso Zoppi (University of Florence)<br>**How to protect the protector?**<br>Tobias Stumpf (TU Dresden)<br>**Toward Survivable Intrusion-Tolerant Open-Source SCADA**<br>Thomas Tantillo (Johns Hopkins University)<br>**Counting the Frequency of Indirect Branches to Detect Return-Oriented Programming Attacks**<br>Mateus Felipe Tymburibá Ferreira (Federal University of Minas Gerais)<br>**Software-Based Fault Tolerance: Towards New Advances for COTS-Based Embedded Systems**<br>Andrea Höller (Graz University of Technology) |
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| 15:15 – 16:30 | **Technical Committee Meeting** | | |