SafeComp 2011

The 30th International Conference on Computer Safety, Reliability and Security

19 / 22 September 2011 - Naples, Italy

Technically co-sponsored by IEEE Computer Society in cooperation with ACM SIGBED and SIGSAC
Monday, September 19, 2011

08:00 - 09:00 Registration
09:00 - 09:30 Opening Session
09:30 - 10:30 Keynote Address 1
Invited Speaker: Paulo Verissimo - Faculty of Sciences, University of Lisboa, Lisboa, Portugal
Security and Dependability Risks of Critical Information Infrastructures (or why Bang! is different from Crash)
10:30 - 11:30 Session 1: RAM Evaluation 1
The Effect of Correlated Failure Rates on Reliability of Continuous Time 1-Out-of-2 Software
P. Popov, G. Manno
Model-Driven Availability Evaluation of Railway Control Systems
S. Bernardi, F. Fiammini, S. Marrone, J. Merseguer, C. Papa and V. Vittorini
11:30 - 11:45 Refreshments and Networking With Exhibitors
11:45 - 13:15 Session 2: Complex Systems Dependability 1
Vertical Safety Interfaces - Improving the Efficiency of Modular Certification
B. Zimmer, S. Bürklen, M. Knoop, J. Höflinger and M. Trapp
DALculus – Theory and Tool for Development Assurance Level Allocation
P. Bieber, R. Delmas and C. Seguin
Towards Cross-Domains Model-Based Safety Process, Methods and Tools for Critical Embedded Systems:
The CESAR Approach
13:15 - 14:30 Lunch and Networking With Exhibitors
14:30 - 15:30 Session 3: Formal Verification 1
From Probabilistic Counterexamples via Causality to Fault Trees
M. Kuntz, F. Leitner-Fischer and S. Leue
Rigorous Evidence of Freedom from Concurrency Faults in Industrial Control Software
R. Bonichon, G. Canet, L. Correnson, E. Goubault, E. Haucourt, M. Hirschowitz, S. Lobbé and S. Mimram
15:30 - 15:50 Refreshments and Networking With Exhibitors
15:50 - 16:50 Session 4: Risk and Hazard Analysis
Evolutionary Risk Analysis: Expert Judgment
M. Felici, V. Meduri, B. Solhaug and A. Tedeschl
Computer-Aided PHA, FTA and FMEA for Automotive Embedded Systems
R. Mader, E. Armengaud, A. Leitner, C. Kreiner, Q. Bourrouilh, G. Griëßnig, C. Steger and R. Weiß
16:50 - 17:50 Session 5: Cybersecurity
A Statistical Anomaly-Based Algorithm for On-line Fault Detection in Complex Software Critical Systems
A. Bovenzi, F. Brancati, S. Russo and A. Bondavalli
Security Analysis of Smart Grid Data Collection Technologies
L. Coppolino, S. D'Antonio, I. A. Elia and L. Romano

Social Events

Monday, September 19, 2011
18:00 - 20:00 City Sightseeing on board of red, open-top, double-decker buses
20:00 Welcome Cocktail at the Roof Garden of the Hotel Excelsior

Tuesday, September 20, 2011
18:00 - 20:00 Guided Tour to Castel dell'Ovo
20:00 Conference Dinner at "La Bersaglieria"
08:00 - 09:15  Registration
09:15 - 10:15  Keynote Address 2
  Invited Speaker: Gerard J. Holzmann - Computer Science Dept, California Institute of Technology (Caltech) and NASA Jet Propulsion Laboratory, Laboratory for Reliable Software, Pasadena, USA
  Software Safety and Software Complexity
10:15 - 11:15  Session 6: RAM Evaluation 2
  Modeling Aircraft Operational Reliability
  K. B. Tiassou, K. Kanoun, M. Kaaniche, C. Seguin and C. Papadopoulos
  An Integrated Approach for Availability and QoS Evaluation in Railway Systems
  A. Mazzeo, N. Mazzeocca, R. Nardone, L. D'Acerno, B. Montella, V. Punzo, E. Quaglia, I. Lamberti and P. Manno
11:15 - 11:45  Refreshments and Networking With Exhibitors
11:45 - 13:15  Session 7: Case Studies
  Using a Software Safety Argument Pattern Catalogue: Two Case Studies
  R. Hawkins, K. Clegg, R. Alexander and T. Kelly
  Integration of a System for Critical Infrastructure Protection with the OSSIM SIEM Platform: a Dam Case Study
  L. Coppolino, S. D'Antonio, V. Formicola and L. Romano
  A Case Study on State-Based Robustness Testing of an Operating System for the Avionic Domain
  D. Cotroneo, D. Di Leo, R. Natella and R. Pietrantuono
13:15 - 14:30  Lunch and Networking With Exhibitors
14:30 - 15:30  Session 8: Formal Verification 2
  Formal Methods for the Certification of Autonomous Unmanned Aircraft Systems
  M. Webster, M. Fisher, N. Cameron and M. Jump
  Verifying Functional Behaviors of Automotive Products in EAST-ADL2 Using UPPAAL-PORT
  E.Y. Kang, P.Y. Schobbens and P. Pettersson
15:30 - 15:50  Refreshments and Networking With Exhibitors
15:50 - 16:30  EWICS TC7 Presentation
  EWICS TC7 Subgroup Presentations
16:30 - 17:30  Poster Session
  Establishing Confidence in the Usage of Software Tools in Context of ISO 26262
  J. Hillebrand, P. Reichenpfader, I. Mandic, H. Siegl and C. Peer
  Fault-Based Generation of Test Cases from UML-Models – Approach and Some Experiences
  R. Schlick, W. Herzner and E. Jöbstl
  ISO/IEC 15504-10: Motivations for Another Safety Standard
  G. Lami, F. Fabbrini and M. Fusani
  Automatic Synthesis of SRN Models from System Operation Templates for Availability Analysis
  K. Tadano, J. Xiang, M. Kawato and Y. Maeno
  A Collaborative Event Processing System for Protection of Critical Infrastructures from Cyber Attacks
  L. Aniello, G.A. Di Luna, G. Lodi and R. Baldoni
  A Fault-Tolerant, Dynamically Scheduled Pipeline Structure for Chip Multiprocessors
  H. Allee and H.R. Zaranzi
  FloGuard: Cost-Aware Systemwide Intrusion Defense via Online Forensics and On-Demand IDS Deployment
  S.A. Zonouz, K.R. Joshi and W.H. Sanders
  Reducing Complexity of Data Flow Testing in the Verification of a IEC-62304 Flexible Workflow System
  F. Cruciani and E. Vicario
  Improvement of Processes and Methods in Testing Activities for Safety-Critical Embedded Systems
  G. Bonifacio, P. Marmo, A. Orizzo, I. Petrone, L. Velardi and A. Venticinque
Wednesday, September 21, 2011  Centro Congressi Partenope Federico II, Aula Magna, first floor

08:00 - 09:00  Registration  
09:00 - 10:00  Keynote Address 3  
Invited Speaker: Andrea Bondavalli - Dip. di Sistemi ed Informatica, University of Firenze, Firenze, Italy and ResilTech Srl, Cascina (PI), Italy  
Model-Based Resilience Assessment of Critical Information Infrastructures  

10:00 - 11:30  Session 9: Formal Verification 3  
On the Adoption of Model Checking in Safety-Related Software Industry  
A. Fantechi and S. Gnesi  
Equivalence Checking between Function Block Diagrams and C Programs Using HW-CBMC  
D.A. Lee, J. Yoo and G.S. Lee  
A Framework for Simulation and Symbolic State Space Analysis of Non-Markovian Models  
L. Carnevali, L. Ridi and E. Vicario  

11:30 - 12:00  Refreshments and Networking With Exhibitors  

12:00 - 13:00  Session 10: Optimization Methods  
Model-Based Multi-objective Safety Optimization  
M. Güdemann and F. Ortmeier  
Tradeoff Exploration between Reliability, Power Consumption, and Execution Time  
I. Assayad, A. Girault and H. Kalla  

13:00 - 14:30  Lunch and Networking With Exhibitors  

14:30 - 15:30  Session 11: Complex Systems Dependability 2  
Criticality-Driven Component Integration in Complex Software Systems  
A. Pecchini, R. Pietrantuono and S. Russo  
On the Use of Semantic Technologies to Model and Control Security, Privacy and Dependability in Complex Systems  
A. Fiaschetti, F. Lavorato, V. Suraci, A. Palo, A. Tagliatela, A. Morgagni, R. Baldelli and F. Fiammini  

15:30 - 15:50  Coffee and Wrap up  
15:50  Best Presentation Award, Announcement 2012 and Closing Session  

Thursday, September 22, 2011  Workshop and Tutorial Day  

Workshops  
full day  
S&D4RCES Workshop  
room "CAPUANA", Hotel Royal Continental, Via Partenope 38 - ground floor  
International Workshop on Security and Dependability for Resource Constrained Embedded Systems  
Brahim Hamid, Carsten Rudolph, Antonio Mana, Simin Nadjm-Tehrani  

full day  
ERCIM/EWICS/Cyberphysical Systems Workshop  
room A, Centro Congressi Partenope Federico II, Via Partenope 36 - ground floor  
Resilient Systems, Robotics, Systems-of-Systems Challenges in Design, Validation & Verification and Certification  
Erwin Schoitsch, Amund Skavhaug  

Tutorials  
room B, Centro Congressi Partenope Federico II, Via Partenope 36 - ground floor  
09:00 - 13:00  Correct-by-Construction Development of Dependable Systems  
Elena Troubitsyna, Alexei Illiasov, Linas Laibinis  

14:00 - 18:00  Software Fault Tolerance in the Twenty First Century  
Kishor S. Trivedi
## Chairs

**EWICS Chair:**
Francesca Saglietti  
(Univ. of Erlangen-Nuremberg, Germany)

**Honorary Chairs:**
Giovanni Bocchetti  
(Ansaldo STS, Italy)  
Giorgio Franceschetti  
(Univ. of Naples Federico II, Italy)  
Antonino Mazzeo  
(Univ. of Naples Federico II, Italy)

**Local Chairs:**
Nicola Mazzocca  
(Univ. of Naples Federico II, Italy)  
Concetta Pragliola  
(Ansaldo STS, Italy)  
Roberto Setola  
(Univ. Campus Biomedico di Roma, Italy)  
Valeria Vittorini  
(Univ. of Naples Federico II, Italy)

**PC Chairs:**
Francesco Flammini  
(Ansaldo STS, Italy)  
Sandro Bologna  
(AlIc, Italy)

## International Program Committee

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