

EDCC 2021 Program

Time zone: Central European Time (CET)

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Monday, September 13th, 2021 – Workshops

General rule: Scientific talks are 15 minutes + 5 minutes discussion

See workshop webpages:

[DREAMS](#)

[DSOGRI](#)

[SERENE](#)

[CARS](#)

DREAMS

14:00 – 14:10

Introduction

- Rasmus Adler, Daniel Schneider (Fraunhofer IESE, Germany), Phillip Schleiß, Simon Burton (Fraunhofer IKS, Germany)

14:10 – 14:45

Keynote: Artificial Morality in Dynamic Risk Management

- Rasmus Adler

14:45 – 15:00

Break

15:00 – 16:00

Session 1: Risk Assessment & Modular Safety Cases

(Session Chair: Rasmus Adler)

- Jan Reich, Marc Wellstein, Ioannis Sorokos, Fabian Oboril, Kay-Ulrich Scholl: Towards a Software Component to Perform Situation-Aware Dynamic Risk Assessment for Autonomous Vehicles
- Carsten Thomas, Elham Mirzaei, Björn Wudka, Lennart Siefke, Volker Sommer: Service-Oriented Reconfiguration in Systems of Systems Assured by Dynamic Modular Safety Cases
- Marta Grobelna: Behavior Prediction of Cyber-Physical Systems for Dynamic Risk Assessment

- 16:00 – 16:15** **Break**
- 16:15 – 17:00** **Session 2: Cloud & AI**
(Session Chair: Rasmus Adler)
- João Tomás, André Bento, João Soares, Luís Ribeiro, António Ferreira, Rita Carreira, Filipe Araujo, Raul Barbosa: Autonomic service operation for cloud applications: Safe actuation and risk management
 - Prajit T Rajendran, Agnes Delaborde, Huascar Espinoza and Chokri Mraidha: Evaluation of Human-in-the-Loop Learning based Autonomous Systems
- 17:00 – 17:30** **Wrap-up**
- 17:30** **Networking**
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SERENE

- 14:00 – 14:10** **Introduction**
- Amleto Di Salle (University of L'Aquila, Italy), Amel Bennaceur (Open University, United Kingdom)
- 14:10 – 15:00** **Keynote: Stories of socio-technical resilience**
- Prof. Bashar Nuseibeh
- 15:00 – 15:15** **Break**
- 15:15 – 15:55** **Session 1: Resilient Cloud**
(Session Chair: Amleto Di Salle)
- Jacopo Soldani, Antonio Brogi: Automated Generation of Configurable Cloud-Native Chaos Testbeds
 - Szilárd Bozóki, Imre Kocsis, András Pataricza, Benedek Kovacs, Peter Suskovics: The impact of rare container restarts on uninterrupted Kubernetes operations
- 15:55 – 16:15** **Break**

16:15 – 17:15

Session 2: Resilience Architectures and Applications

(Session Chair: Amel Bennaceur)

- Farid Edrisi, Diego Perez-Palacin, Mauro Caporuscio, Margrethe Hallberg, Anton Johannesson, Claudia Kopf, Johanna Sigvardsson: EA Blueprint: An Architectural Pattern for Resilient Digital Twin of the Organization
- Mohammed El Amin Tebib, Pascal André, Oum-El-Kheir Aktouf, Mariem Graa: Assisting Developers in Preventing Permissions Related Security Issues in Android Applications
- Matthew Banton, Juliana Bowles, Agastya Silvina, Thais Webber: Design of a Trustworthy and Resilient Data Sharing Platform for Healthcare Provision

17:15 – 17:30

Wrap-up

17:30

Networking

CARS

14:00 – 14:10

Introduction

- Rolf Johansson (Astus AB, Sweden), Jean-Charles Fabre (LAAS-CNRS, France), Mario Trapp (Fraunhofer IKS, Germany)

14:10 – 15:10

Session 1: Safety Assurance

(Session Chair: Mario Trapp)

- Magnus Gyllenhammar, Carl Bergenhem and Fredrik Warg: ADS Safety Assurance – Future Directions
- Stefan Kaalen, Mattias Nyberg and Olle Mattsson: Using State Transition Diagrams for Safety Quantification within the Automotive Industry
- Rolf Johansson and Håkan Sivencrona: Developing SEooC – Original Concepts and Implications when Extending to ADS

15:10 – 15:15

Break

15:15 – 16:15

Session 2: Security and Safety

(Session Chair: Rolf Johansson)

- Maria Assunta Cappelli and Giovanna Di Marzo Serugendo: A semantic-based approach to analyze the link between security and safety for Internet of Vehicle (IoV) and Autonomous Vehicles (AVs)
- Priyadarshini Priyadarshini, Simon Greiner, Maike Massierer and Oum-El-Kheir Aktouf: A Method for Identifying Inconsistencies between Functional Safety and Cybersecurity of Autonomous Vehicles
- Lorenzo Rosa, Sagar Jha, Ken Birman: DerechoDDS: Efficiently leveraging RDMA for fast and consistent data distribution

16:15 - 16:20

Break

16:20 – 17:20

Session 3: Safe Autonomous Driving

(Session Chair: Jean-Charles Fabre)

- Florian Wörter, Andreas Kreutz, Aniket Salvi, Marc Dreiser and Gereon Weiß: Enhanced System Awareness as Basis for Resilience of Autonomous Vehicles
- Magnus Gyllenhammar, Fredrik Sandblom, Mattias Brännström, Stig Ursing, Rolf Johansson and Fredrik Warg: Minimal Risk Condition for Safety Assurance of Automated Driving Systems
- Joao-Vitor Zacchi and Mario Trapp: Towards Collaborative Perception in Automated Driving: Combining Vehicle and Infrastructure Perspectives

17:20-17:30

Wrap-up

17:30

Networking

DSOGRI

13:00 – 13:10

Welcome and Introduction

Nicola Nostro (Resiltech s.r.l., Italy), Rasmus Olsen, Hans-Peter Schwefel (Aalborg University, Denmark)

13:10 – 13:50

Keynote: Digital Technologies for the Electricity Distribution Grid - Status and Evolution Paths

Walter Schaffer (Salzburg Netz GmbH)

13:50

Session 1

- (Session Chair: Nicola Nostro)

13:50 – 14:05

- Kamal Shahid, Rasmus Olsen, Rolf Kirk: Field Test Validation of Low Voltage Grid Applications in a Danish Setting

14:05 – 14:20

- Christine Schäler, Kamal Shahid and Rasmus Løvenstein Olsen: Reducing the Time to Diagnose Outages in Low Voltage Distribution Grids

14:20 – 14:30

- Christine Schäler, Klaus Strasser, Robert Damböck, Hans-Peter Schwefel: Increased renewable hosting capacity of a real low-voltage grid based on continuous measurements -- Results from an Actual PV Connection Request

14:30 – 14:40

Q&A / discussion

14:40 – 15:00

Break

15:00 – 15:20

Invited Talk: The role of solar inverters in future electricity distribution grids – Nicole Diewald

15:20

Session 2

- (Session Chair: Rasmus Olsen)

15:20 – 15:35

- Yonghao Gui, Hans-Peter Schwefel, Jan Bendtsen, Jakob Stoustrup: Power Loss Reduction in Low-voltage Distribution Grids via Coordinated Reactive Power Management of PV Inverters

15:35 – 15:50

- Giovanni Paolo Sellitto, Tanja Pavleska, Massimiliano Masi, Helder Aranha: Enabling a Zero Trust Architecture in Smart Grids through a Digital Twin

15:50 – 16:10

- Christine Schäler, Serge Foko Fotso, Domagoj Drenjanac, Juan Felipe Chaves, Markus Duchon: An ICT System To Assist Earth Fault Localization

16:10 – 16:20

- Juan Felipe Chaves and Markus Duchon: Signature Generation Using Parametrized Grid Models for Fault Localization in Simulink Called from a Web Rest API

16:20 – 16:35

Q&A / discussion

16:35 – 16:45

Wrap-up

16:45

Networking

Tuesday, September 14th

14:00 – 14:15

Welcome to EDCC

- Jeremie Guiochet, Karama Kanoun, Michael Paulitsch, Mario Trapp

14:15

Announcement

- (Session Chair: Mario Trapp)

- 14:15 – 15:00** **Keynote Speaker 1: "The Power of AI & CV for Automation in Rail and its Challenges"** – Claus Bahlmann
- 15:00 – 15:15** **Break**
- 15:15 – 16:15** **Session 1: Distinguished Papers**
(Session Chair: Antonio Casimiro)
- José D'Abruzzo Pereira, João R Campos and Marco Vieira: "Machine Learning to Combine Static Analysis Alerts with Software Metrics to Detect Security Vulnerabilities: An Empirical Study"
 - Marta Grobelna, Joao-Vitor Zacchi, Philipp Schleiß and Simon Burton: "Dynamic Risk Management for Safely Automating Connected Driving Maneuvers"
 - Marcello Cinque, Raffaele Della Corte and Roberto Ruggiero: "Preventing timing failures in mixed-criticality clouds with dynamic real-time containers"
- 16:15 – 16:30** **Break**
- 16:30 – 17:30** **Session 2: Dependability Assessment**
(Session Chair: Paolo Lollini)
- Jacopo Parri, Samuele Sampietro and Enrico Vicario: "FaultFlow: a tool supporting an MDE approach for Timed Failure Logic Analysis"
 - Dániel Szekeres, Kristóf Marussy and Istvan Majzik: "Tensor-based reliability analysis of complex fault trees"
 - Jomar Domingos, Raul Barbosa and Henrique Madeira: "Why is it so hard to predict computer systems failures?"
- 17:30 – 17:45** **Break**

17:45 – 18:25

Session 3: Fast Abstracts

(Session Chair: Barbara Gallina)

- Koichi Bando, Kenji Tanaka: "Attempt to Predict Failure Case Classification in a Failure Database by using Neural Network Models"
- Abdul Rahim Saleh, Gihad Al-Nemera, Saif Al-Otaibi, Rashid Tahir, Mohammed Alkhatib: "Making Honey Files Sweeter: SentryFS - A Service-Oriented Ransomware Defense Solution"

18:25

End – Close up

Wednesday, September 15th

14:00 – 14:45

Announcement

(Session Chair: Jérémie Guiochet)

Keynote Speaker 2: "Leveraging AI methods for testing non-testable autonomous systems" – Arnaud Gotlieb

14:45 – 15:00

Break

15:00 – 16:00

Session 4: Verification

(Session Chair: Simon Burton)

- Mehdi Maleki and Behrooz Sangchoolie: "SUF1: A Simulation-based Fault Injection Tool for Safety Evaluation of Advanced Driver Assistance Systems Modelled in SUMO"
- Daniel Loche, Alexis Generes, Michaël Lauer and Jean-Charles Fabre: "Run-time Monitoring and Control for Temporal Fault Prevention in Mixed-criticality Systems"
- Andreas Schmidt, Jan Reich and Ioannis Sorokos: "Live in ConSerts: Model-Driven Runtime Safety Assurance on Microcontrollers, Edge, and Cloud"

16:00 – 16:15 **Break**

16:15 – 17:15 **Session 5: Security**

(Session Chair: Michael Cukier)

- David Ferreira, João Paulo and Miguel Matos: "ATOCS - Automatic Configuration of Secure Databases"

- Simona Bernardi, Raúl Javierre, José Merseguer and Jose Ignacio Requeno: "Detectors of Smart Grid Integrity Attacks: An Experimental Assessment"

- Ricardo Czekster and Charles Morisset: "BDMPathfinder: a tool for exploring attack paths in models defined by Boolean logic Driven Markov Processes"

17:15 **Break**

17:45 – 18:45 **Virtual City Tour**

Thursday, September 16th

14:00 – 14:45 **Announcement**

- (Session Chair: Mario Trapp/Michael Paulitsch)

Keynote Speaker 3: "Towards Safe AI for Automated Driving"

– Fabian Hüger

14:45 – 15:00 **Break**

15:00 - 16:00 **Session 6: AI & Dependability**

(Session Chair: Elena Troubitsyna)

- Nádia Medeiros, Naghmeh Ivaki, Pedro Nunes Da Costa and Marco Vieira: "An Empirical Study on Software Metrics and Machine Learning to Identify Untrustworthy Code"
- Michael Kläs, Rasmus Adler, Ioannis Sorokos, Lisa Joeckel and Jan Reich: "Handling Uncertainties of Data-Driven Models in Compliance with Safety Constraints for Autonomous Behaviour"
- Ahmad Adee, Roman Gansch and Peter Liggesmeyer: "Systematic Modeling Approach for Environmental Perception Limitations in Automated Driving"

16:00 – 16:15 **Break**

16:15 – 17:15 **Session 7: Distributed Systems**

(Session Chair: Rogério de Lemos)

- Oskar Lundström, Michel Raynal and Elad Michael Schiller: "Self-stabilizing Multivalued Consensus in Asynchronous Crash-prone Systems"
- Laura Lawniczak and Tobias Distler: "Stream-based State-Machine Replication"
- Michael Conard and Ali Ebnenasir: "A Practical Self-Stabilizing Leader Election for Networks of Resource-Constrained IoT Devices"

17:15 – 17:30 **Break**

17:30 – 18:10 **Session 8: Student Session**

(Session Chair: Marcello Cinque)

- Muhammad Rusyadi Ramli, Fredrik Asplund, and Martin Toerngren: "Towards Reference Architecture for Trustworthy Collaborative Cyber-Physical Systems: Reference Architecture as Boundary Objects"

- Richárd Szabó and Vörös András: "Towards formally analyzed Cyber-Physical Systems"
- Anamta Khan: "Risk Assessment, Prediction, and Avoidance of Collision in Autonomous Drones"

18:10 – 18:30

Closing session / EDCC 2022 | Preview

- Simona Bernardi, Karama Kanoun, Mario Trapp, Michael Paulitsch