

Conference Record



2025 The 9th International Conference on **SYSTEM RELIABILITY AND SAFETY**

ICRE 2025 9th International Conference on
RELIABILITY ENGINEERING

Turin, Italy
November 26-28, 2025



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The 9th International Conference on System Reliability and Safety (ICSRS 2025) will take place from November 26-28, 2025, in Turin, Italy, and is technically co-sponsored by Politecnico di Milano, Italy and IEEE Reliability Society (Italy Chapter).



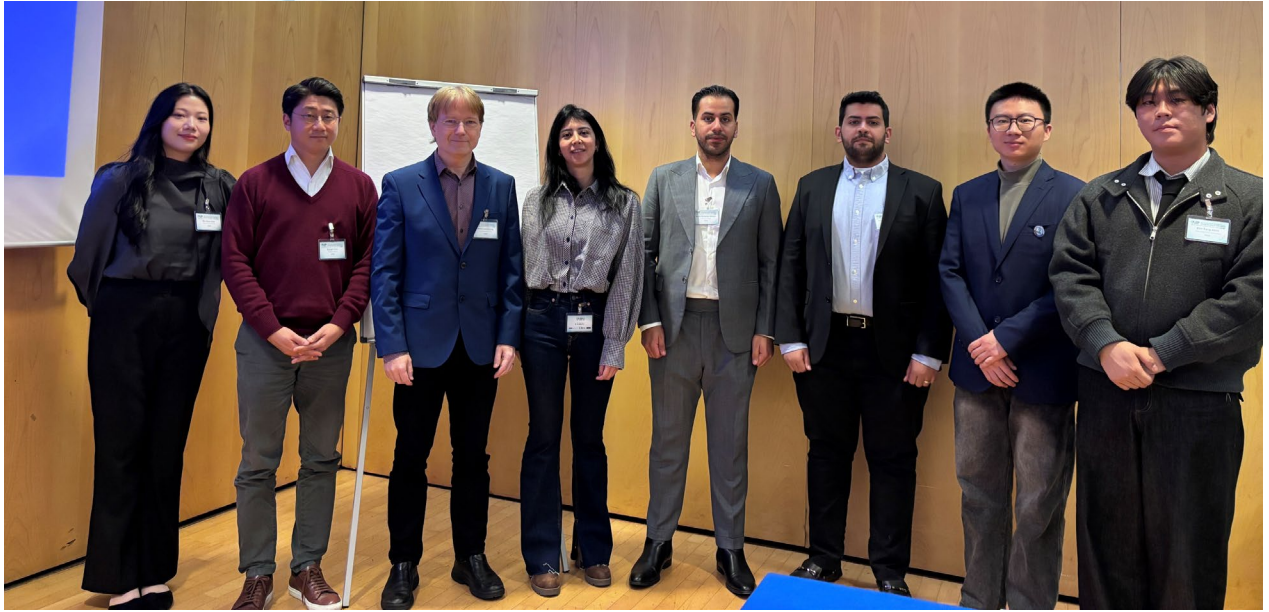
2025 The 9th International Conference on System Reliability and Safety (ICSRS 2025)

Turin, Italy | November 26-28, 2025









► Keynote Speakers



Liudong Xing is currently a Commonwealth Professor and College of Engineering Director of Research at the University of Massachusetts Dartmouth. She received her Ph.D. degree in Electrical Engineering from the University of Virginia, Charlottesville in 2002. Her research focuses on reliability modeling and analysis of complex systems and networks. She has authored or co-authored over 320 journal articles and three monographs entitled “Reliability and Resilience in the Internet of Things”, “Binary Decision Diagrams and Extensions for System Reliability Analysis”, and “Dynamic System Reliability: Modeling and Analysis of Dynamic and Dependent Behaviors”. Prof. Xing has received multiple teaching and scholarly awards from her university and IEEE. She was also a co-recipient of eight best (student) paper awards at international conferences and journals. She currently serves as associate editor or editorial board member for Reliability Engineering & System Safety, IEEE Internet of Things Journal, IEEE Access (Reliability Society section), and other journals. She is an IEEE ComSoc Distinguished Lecturer for the class of 2024-2025 and a fellow of the International Society of Engineering Asset Management.



Yu Liu is the Director of University Undergraduate Teaching Affair Office at the University of Electronic Science and Technology of China. He is also the Full Professor and was the former Dean of the School of Mechanical and Electrical Engineering at the University of Electronic Science and Technology of China. He received his PhD degree in Mechatronics Engineering from the University of Electronic Science and Technology of China. He was a Visiting Pre-doctoral Fellow in the Department of Mechanical Engineering at Northwestern University, Evanston, U.S.A. from 2008 to 2010, and a Postdoctoral Research Fellow in the Department of Mechanical Engineering, at the University of Alberta, Edmonton, Canada from 2012 to 2013. He has published 3 Springer books and over 100 peer-reviewed papers in international journals, such as IEEE Transactions on Reliability, IJSE Transactions, Naval Research Logistics, European Journal of Operational Research, Reliability Engineering and System Safety. He has been recognized as one of the Most Cited Chinese Researchers by Elsevier since 2016 and the World's Top 2% Scientists since 2020. He was a recipient of the Chang Jiang Scholars Program Distinguished Professors, National Science Fund for Excellent Young Scholars, IJSE QCRE Teaching Award, the Youth Science and Technology Award of Operations Research Society of China, the Youth Science and Technology Award of Sichuan Province, and the HIWIN Doctoral Dissertation Award sponsored by Chinese Society of Mechanical Engineers and HIWIN Technologies Corporation. He serves as an Associate Editor of IJSE Transactions, IEEE Transactions on Reliability, Engineering Optimization, Area Editor of Journal of Reliability Science and Engineering, and one of the editorial board members of Reliability Engineering and System Safety, Quality and Reliability Engineering International, Chinese Journal of Aeronautics, International Journal of Reliability, Quality and Safety Engineering. He also serves as the Elected President of the Reliability Committee of Operations Research Society of China and the Chair of IEEE Reliability Society Chengdu Section Chapter. He is an ISEAM Fellow.



Yeh is currently a Chair Professor in the Department of Industrial Engineering and Engineering Management at National Tsing Hua University in Taiwan. He received his M.S. and Ph.D. from the Department of Industrial Engineering at the University of Texas at Arlington. His research primarily focuses on algorithms, including exact solution methods and soft computing.

He has published more than 350 research papers in highly ranked journals and conferences and has received multiple prestigious awards, including the Outstanding Research Award (twice), the Distinguished Scholars Research Project (once), and the Overseas Research Fellowship (twice) from the Ministry of Science and Technology (MOST) in Taiwan.

He has been invited to serve as an Associate Editor for three journals: IEEE Transactions on Reliability, IEEE Access, and Reliability Engineering & System Safety. He proposed a novel soft computing algorithm called Simplified Swarm Optimization (SSO) and developed a new implicit enumeration algorithm known as the Binary-Addition-Tree (BAT) algorithm. Both SSO and BAT have demonstrated simplicity, effectiveness, efficiency, and flexibility in solving NP-hard problems.

He has been granted more than 55 patents, listed among the top 2% of scientists globally (2020-2023) by Stanford University, and recognized with several honors, including International Fellow, MOST Fellow (2021), CIIE Fellow (Chinese Institute of Industrial Engineers, 2022), the Guoguang Invention Medal, as well as the titles of Outstanding Inventor of Taiwan and Doctor of Erudition by the Chinese Innovation and Invention Society.

► Session Keynote Lecturers



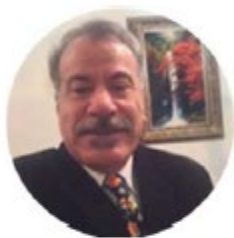
Sylwia Werbińska-Wojciechowska
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University of Science and
Technology, Poland



Alba Sofi
University "Mediterranea" of
Reggio Calabria, Italy



Emmanuel Fragniere
University of Applied Sciences
Western Switzerland, Switzerland



Mohammad Ali Saniee Monfared
Alzahra University, Iran



Márcio das Chagas
Federal University of
Pernambuco, Brazil



Janet (Jing) Lin
Luleå University of Technology,
Sweden



Yanhui Lin
Beihang University, China



Jens Vankeirsbilck, KU Leuven,
Belgium



Nicola Pedroni
Politecnico di Torino, Italy



Huixing Meng
Beijing Institute of Technology,
China



Elena Zaitseva
University of Zilina, Slovakia



Fabio Postiglione
University of Salerno, Italy



► Session Keynote Lecturers



Yi-Ping Fang

University of Paris Saclay, France



Podofilini Luca



Hon Keung Tony Ng

Paul Scherrer Institute, Switzerland
Bentley University, USA



Yuantao Yao

Institute of Nuclear Energy



Kaixin Shen

Tsinghua University, China

► About Turin, Italy



Torino, often known as Turin in English, is a city steeped in history and culture, located in the northern part of Italy. Nestled against the backdrop of the majestic Alps, it is the capital of the Piedmont region and has played a significant role throughout Italy's history, particularly as the first capital of unified Italy from 1861 to 1865. Known for its baroque architecture, rich culinary traditions, and vibrant arts scene, Torino seamlessly blends old-world charm with modern innovation.

Visitors to Torino are captivated by its stunning landmarks, including the iconic Mole Antonelliana, which offers breathtaking views from its observation deck. The city's historical significance is evident in its impressive museums, such as the Museo Egizio, one of the most important Egyptian museums in the world, and the National Cinema Museum housed within the Mole. The Royal Palace of Turin, a UNESCO World Heritage Site, and the surrounding gardens further illustrate the city's regal past.

Torino is also world-renowned for its culinary delights, particularly its chocolate and the famous aperitif, vermouth. The city's cafes and restaurants reflect its rich gastronomic heritage, making it a paradise for food lovers. The annual Torino Film Festival and the International Book Fair enhance its reputation as a hub of culture and creativity.

► Excellent Presentation Winners

Online Session A - Reliability Modeling of Aviation Hydraulic Actuators Based on Belief Reliability Theory

Author(s): Tianying Li, Yutong Jiang, Wenbin Chen, Xiaoyang Li

Presenter: Tianying Li, Beihang University, China

Online Session B - An Intelligent Operation and Maintenance Framework Based on Belief Reliability for Unmanned Swarm Systems

Author(s): Qilong Wu, Yingyi Li, Mengting Lin, Kexin Li, Rui Kang, Chao Yang

Presenter: Qilong Wu, Beihang University, China

Online Session C - Multi-Objective Eco-Driving Optimization for Hydrogen Trains Using Genetic Algorithms

Author(s): Yuanlei Kang, Aoze Zhu, Zhanyi Shu, Yuchu Liao, Xinnan Lyu, Yimin Yuan and Lei Chen

Presenter: Yuchu Liao, The University of Birmingham, UK

Online Session D - Optimal Assembly of Compressor Packings under Dimensional Constraints: A Multi-Stage CP Approach

Author(s): Ehsan Esmaeeli, Zargham Behrouzi, Davoud Behrouz, Mohammadreza Safari, Alireza Lotfi, Hamed Nikousefat

Presenter: Ehsan Esmaeeli, Sharif University of Technology, Iran

Session 1 - The Structural Reliability Analysis Method of Electronic System Considering the Dependent Failure Processes

Author(s): Yanfang Wang, Ying Chen, Yingyi Li

Presenter: Yanfang Wang, Beihang University, China

Session 2 - Compiler Assisted Application Hardening: An ISO 26262-Oriented Evaluation Using Virtualized Fault Injection

Author(s): Rui Almeida, André Costa, Vitor Silva, Jorge Cabral

Presenter: Rui Jorge Mendes Almeida, University of Minho & DTx - Digital Transformation Colab, Portugal

Session 3 - Multi-Task Learning and Retrieval-Augmented Generation for Cause and Consequence Prediction on the HIAD Hydrogen Safety Dataset

Author(s): July Macedo, Lucas Alencar Santana da Silva, Dario Valcamonico, Márcio José Das Chagas Moura, Piero Baraldi and Enrico Zio

Presenter: July Bias Macedo, UFPE/CEERMA, Brazil

Session 4 - Bayesian Model Selection for Rail Surface Defect Arrival Characterization via Poisson Processes

Author(s): Saeed Khalaj, Yasaman Memari, Huy Truong-Ba, Michael E. Cholette, Sinda Rebello and Tommy H.T. Chan

Presenter: Saeed Khalaj, Queensland University of Technology (QUT), Australia

► Excellent Presentation Winners

Session 5 - Uncertainty-Aware Online Remaining Useful Lifetime Estimation for Power Electronics

Author(s): Kirill Ivanov, Horst Lewitschnig

Presenter: Kirill Ivanov, Universität Klagenfurt, Austria

Session 6 - AI-Driven Human Reliability for Risk Mitigation in Public Construction

Author(s): Ali Seyfi, Hashem Vahdani, Parisa Niloofar, Hossein Karimi

Presenter: Parisa Niloofar, University of Southern Denmark, Denmark

Session 7 - Applying STPA on Mixed Fleet Factory Scenarios

Author(s): Josepha Berger, Laure Buysse, Dries Vanoost, Davy Pissoort, Taru Hakanen

Presenter: Josepha Berger, VTT, Finland

Session 7 - A Dynamic Resilience Research for Acknowledged System-of-Systems Based on a Stackelberg Evolutionary Game

Author(s): Huanjun Zhang, Yutaka Matsubara

Presenter: Huanjun Zhang, Nagaya University, Japan

Session 8 - Enhancing the Reliability and Safety of Urban Cooling Systems for Heatwave Resilience

Author(s): Jose Emmanuel Ramirez Marquez, Yefeng Liang

Presenter: Jose Ramirez Marquez, Stevens Institute of Technology, US

Investigations of the Usefulness of Automated FMECAs for Electronic Circuits

Author(s): David Westermann, Martin Dazer, Lukas Felsberger, Jan Uythoven, Daniel Wollmann

Presenter: David Westermann, CERN, Switzerland

Session 9 - Deep Reinforcement Learning Maintenance Optimisation of Critical Infrastructure Networks undergoing Continuous-State Degradation

Author(s): Luca Sampaolesi, Masoud Naseri and Enrico Zio

Presenter: Luca Sampaolesi, Politecnico di Milano, Italy

Session 10 - Investigating Explainable AI enhanced Anomaly Detection Methods for Emergency Shutdown Mitigation in High-Temperature Heat Pump

Author(s): Baptiste Lambert, Deeksha Singh

Presenter: Baptiste Lambert, DLR, Germany

Session 11 - Maintaining Railway Infrastructure Availability Under Threats: The Potential of Fiber Optic Sensing for Fast Attack Detection and Response

Author(s): Miroslav Pejic, Bilal Üyümez, Baran Önen, Andreas Oetting

Presenter: Baran Önen, Technical University of Darmstadt, Germany

Session 12 - Modeling the impact of Critical Infrastructures Resilience on Urban Resilience

Author(s): Mria Valentina Clavijo Mesa, Francesco Di Maio, Luca Podofillini, Enrico Zio

Presenter: Maria Valentina Clavijo Mesa, Politecnico di Milano, Italy

Session 13 - Enhancing automated warranty repair reports analysis with AI generative technologies

Author(s): Fabio Verdinelli, Mathew Thomas

Presenter: Fabio Verdinelli, CNH, Italy