CONFERENCE PROGRAM

30th ISSAT International Conference on
Reliability and Quality in Design

Waikiki, Hawaii, U.S.A.

August 6-8, 2025

Conference Sponsor

ISSAT

The International Society of
Science and Applied Technologies

In Cooperation with

The Korean Reliability Society (KORAS)

Reliability Engineering Association of
Japan (REAJ)

Reliability Society Japan Join Chapter
(IEEE-RSJC)

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In Cooperation with:

The Korean Reliability Society (KORAS)

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Lifetime Achievement Award

Prof. Shigeru Yamada
Tottori University, Japan

RQD 2024 Best Paper Awards

Prof. Valentina Kuskova
University of Notre Dame, USA

"Data Sampling Intervals in Energy Research: An Exploration"

by
Valentina Kuskova; Dmitry Zaytsev

★ ★

Dr. Fengbin Sun
Tesla, Inc., USA

"Global Equivalent S-N Curve Exponent for a Vibrating System with Nonhomogeneous Materials"

by
Fengbin Sun; Yuvraj Naikavde

RQD 2024 Best Student Paper Award

Mr. Jiafeng Wang
Zhengzhou University, China

"Intelligent Medical Resource Allocation Strategy for Overloaded Hospitals in Emergency Situations, Considering Reliability and Cost"

by
Jiafeng Wang, Tianmeng Zhu, Yu Wang, Yunkai Zhai, Hongyan Dui

Conference Agenda

WEDNESDAY, AUGUST 6 (Hybrid)	THURSDAY, AUGUST 7 (Hybrid)	FRIDAY, AUGUST 8 (Virtual Only)
8:00 - 8:30 Check-in Continental Breakfast	7:30 - 8:00 Check-in Continental Breakfast	8:00 - 9:50 Technical Session 14
8:30 - 8:45 Welcome Awards Presentation	8:00 - 9:10 Technical Session 7	9:50 – 11:10 Technical Session 15
8:45 - 10:30 Technical Session 1	9:10 - 10:20 Technical Session 8	11:10 – 13:00 Technical Session 16
10:30 - 10:40 Coffee Break	10:20 - 10:30 Coffee Break	13:00 – 14:50 Technical Session 17
10:40 - 11:50 Technical Session 2	10:30 - 12:00 Technical Session 9	14:50 – 16:20 Technical Session 18
12:00 - 12:50 Conference Luncheon	12:00 - 12:50 Conference Luncheon	16:20 – 17:40 Technical Session 19
13:00 – 14:10 Technical Session 3	13:00 – 14:10 Technical Session 10	17:40 – 19:15 Technical Session 20
14:10 - 15:20 Technical Session 4	14:10 - 15:20 Technical Session 11	Adjourn 19:00
15:20 - 15:30 Coffee Break	15:20 - 15:30 Coffee Break	
15:30 – 16:40 Technical Session 5	15:30 – 16:40 Technical Session 12	
16:40 – 17:50 Technical Session 6	16:40 – 17:50 Technical Session 13	

Conference Sessions

Speaker: **Prof. Valentina Kuskova**

Socio-Economic Impact Assessment of the Company Value Chain System on the Local Economy: A Methodological Overview
  Valentina V. Kuskova *(University of Notre Dame, USA)*
  Dmitry Zaytsev *(University of Notre Dame, USA)*

Speaker: **Dr. Fengbin Sun**

Reliability Allocation Using Importance-Weighted Geometric Mean based "Feasibility of Objectives" Method
  Fengbin Sun *(Tesla Inc., USA)*

Speakers: **Prof. Youn Su Kim, Prof. Kwang Yoon Song**

A Study on Software Reliability Models Considering the Delayed S-Shaped Fault Detection Rates
  Youn Su Kim *(Chosun University, South Korea)*
  Kwang Yoon Song *(Chosun University, South Korea)*
  In Hong Chang *(Chosun University, South Korea)*

Speaker: **Prof. Shinji Inoue**

Interval Estimations of Software Functional Safety for E/E/PE Safety-Related Systems
  Shinji Inoue *(Kansai University, Japan)*
  Takaji Fujiwara *(SRATECH Laboratory Inc., Japan)*
  Shigeru Yamada *(Tottori University, Japan)*

Speaker: **Dr. Yuka Minanino**

A Determination System of Fault Correction Time for Software Development
  Yuka Minamino *(Tottori University, Japan)*
  Masashi Kuwano *(Tottori University, Japan)*
  Mio Hosoe *(Tottori University, Japan)*

Speaker: **Dr. Kazuhira Okumoto**

FUSION: A Cloud-Based Framework for Integrated Software-Hardware Reliability Assessment Using Advanced Analytics and RBDs

  Kazuhira Okumoto *(Sakura Software Solutions LLC, USA)*
  Hoang Pham *(Rutgers University, USA)*

Speaker: **Dr. Hongzhou Wang**

Machine Learning-Based Spare Parts Demand Prediction under General Repair Turnaround Time Distributions
   Hongzhou Wang *(RTX, USA)*
   Brian Hart *(RTX, USA)*

Speaker: **Prof. Yi-Fu Wang**

Degradation Analysis of Multivariate Inverse Gaussian Process with Random Effects
   Yi-Fu Wang *(National Cheng Kung University, Taiwan)*
   Tzu-Erh Huang *(National Cheng Kung University, Taiwan)*

Speaker: **Prof. Meng-Hua Li**

AI-Driven Predictive Maintenance: Bayesian Reliability Assessment and XGBoost for Smart Industrial Systems
   Kuo-Yi Lin *(National Kaohsiung University of Science and Technology, Taiwan)*
   Yu-He Hong *(National Kaohsiung University of Science and Technology, Taiwan)*
   Meng-Hua Li *(National Formosa University, Taiwan)*
   Ming-Lang Tseng *(Asia University, Taiwan)*

Speaker: **Prof. Lance Fiondella**

Resilience Comparison of CNN-enabled Systems under Adversarial Attacks on Different Computing Environments
   Karen Da Mata *(University of Massachusetts Dartmouth, USA)*
   Priscila Silva *(University of Massachusetts Dartmouth, USA)*
   Fatemeh Salboukh *(University of Massachusetts Dartmouth, USA)*
   Lance Fiondella *(University of Massachusetts Dartmouth, USA)*

Wednesday, August 6, 13:00 – 14:10
SESSION 3: Reliability and Maintenance Modeling: Techniques and Applications
Chair: Prof. Shigeru Yamada *(Tottori University, Japan)*

Speaker: **Prof. Mitsutaka Kimura**

Reliability Modelling of Data Transmission Model with CSMA/CA in Wireless Environments
   Mitsutaka Kimura *(Aichi University, Japan)*
   Mitsuhiro Imaizumi *(Aichi Gakusen University, Japan)*
   Toshio Nakagawa *(Aichi Institute of Technology, Japan)*

Speaker: **Prof. Mitsuhiro Imaizumi**

Reliability Analysis of a System Considering Loss Costs for Different Types of Server Attacks
   Mitsuhiro Imaizumi *(Aichi Gakusen University, Japan)*
   Mitsutaka Kimura *(Aichi University, Japan)*

Speaker: **Dr. Haitao Zhang**

Investigation of Residual Stress and Fatigue Reliability Enhancement in Polyimide-Coated Lead Conductor Wires
   Haitao Zhang *(Medtronic, Plc., USA)*
   Bernard Li *(Medtronic, Plc., USA)*
   Mingxiao Jiang *(Medtronic, Plc., USA)*

Speaker: **Prof. Satoshi Mizutani**

Extended Maintenance Policies with Working and Stopping Periods
  Satoshi Mizutani *(Aichi Institute of Technology, Japan)*
  Toshio Nakagawa *(Aichi Institute of Technology, Japan)*

Wednesday, August 6, 14:10 - 15:20
SESSION 4: Process Quality Monitoring and Control: Methods and Applications
Chair: Prof. Kuen-Suan Chen *(National Chin-Yi University of Technology, Taiwan)*

Speaker: **Prof. Pei Wen Chen**

An Enhanced Cumulative Quantity Control Chart Based on Asymmetric Runs Rules
  Pei Wen Chen *(Yuan Ze University, Taiwan)*

Speaker: **Prof. Chun-Min Yu**

Performance Evaluation and Improvement Decision-Making Rules for E-Learning System
  Yen-Po Chen *(National Chengchi University, Taiwan)*
  Yu-Ling Chen *(National Chin-Yi University of Technology, Taiwan)*
  Chun-Hung Yu *(National Chin-Yi University of Technology, Taiwan)*
  Chun-Min Yu *(National Chin-Yi University of Technology, Taiwan)*

Speakers: **Dr. Khac Hieu Nguyen, Dr. Thi My Hanh Nguyen**

Application of SPC and AHP in Quality Control: Case of Electronic Components at a Manufacturing Company
  Khac-Hieu Nguyen *(Ho Chi Minh City University of Technology and Education, Vietnam)*
  Anh-Van Nguyen *(Ho Chi Minh City University of Technology and Education, Vietnam)*
  My-Hanh Nguyen *(Yuan Ze University, Taiwan)*

Speaker: **Prof. Kuen-Suan Chen**

IC Packaging Process Quality Evaluation for Smart Manufacturing Environments
  Kuen-Suan Chen *(National Chin-Yi University of Technology, Taiwan)*
  Chun-Min Yu *(National Chin-Yi University of Technology, Taiwan)*

Wednesday, August 6, 15:30 – 16:40
SESSION 5: Reliability Modeling, Prediction, and AI Methods and Their Applications
Chair: Prof. Satoshi Mizutani *(Aichi Institute of Technology, Japan)*

Speakers: **Prof. Masayuki Arai, Prof. Satoshi Fukumoto**

Self-Training for Accuracy Improvement in Wafer Map Defect Pattern Classification Using AI
  Masaru Kurokawa *(Tokyo Metropolitan University, Japan)*
  Yoshikazu Nagamura *(Tokyo Metropolitan University, Japan)*
  Masayuki Arai *(Nihon University, Japan)*
  Satoshi Fukumoto *(Tokyo Metropolitan University, Japan)*

Speakers: **Prof. Yukio Maruyama, Prof. Yutaka Shirai,Dr. Kazuo Kihara**

An Evaluation of Forecasting Precision with Forecasting Method Concerning Water Demand for A Prefecture
  Yukio Maruyama *(Chiba Institute of Technology, Japan)*
  Yutaka Shirai *(Chiba Institute of Technology, Japan)*
  Kazuo Kihara *(Real Futures Japan Ltd, Japan)*

Speaker: **Prof. Dong-Yuh Yang**

Reliability Evaluation of a Standby Redundant System with Two Types of Components and Secondary Repair
  Chia-Huang Wu *(National Yang Ming Chiao Tung University, Taiwan)*
  Yin-Ying Dai *(National Yang Ming Chiao Tung University, Taiwan)*
  Dong-Yuh Yang *(National Taipei University of Business, Taiwan)*

Speaker: **Prof. Satoshi Mizutani**

Which is Better Problem in Backward Model
  Toshio Nakagawa *(Aichi Institute of Technology, Japan)*
  Xufeng Zhao *(Nanjing University of Aeronautics and Astronautics, China)*
  Satoshi Mizutani *(Aichi Institute of Technology, Japan)*

Wednesday, August 6, 16:40 – 17:50
SESSION 6: Reliability and Deep Learning: Models and Applications
Chair: Prof. Kuo-Ping Lin *(Tunghai University, Taiwan)*

Speaker: **Dr. Chiao-Tzu Huang**

Smart Manufacturing Acceptance Rate Prediction Model: A Deep Learning Approach
  Chiao-Tzu Huang *(National Chin Yi University of Technology, Taiwan)*
  Yi Peng Liao *(Universal AI Technology Co., Ltd., Taiwan)*
  Cheng-Kai Hung *(Universal AI Technology Co., Ltd., Taiwan)*

Speakers: **Mr. Shun-Chang Lin** *, **Prof. Fang-Chih Tien**

Using A2C for Hyperparameter Optimization of Deep Learning Models
  Shun-Chang Lin *(National Taipei University of Technology, Taiwan)*
  Gi-Wei Lin *(National Taipei University of Technology, Taiwan)*
  Fang-Chih Tien *(National Taipei University of Technology, Taiwan)*

Speakers: **Dr. Kai-Yuan Hsiao**, **Prof. Mingchih Chen**

Analyzing arXiv Publication Trends of Generative AI After DeepSeek Release
  Kai-Yuan Hsiao *(Fu Jen Catholic University, Taiwan)*
  Wei Shan Chang *(Institute of Statistical Science, Academia Sinica, Taiwan)*
  Mingchih Chen *(Fu Jen Catholic University, Taiwan)*
  Ben-Chang Shia *(Fu Jen Catholic University, Taiwan)*

Speaker: **Prof. Kuo-Ping Lin**

Fault Tree Analysis Model for Remanufactured Machine Tools by Using Generative AI and Analytic Hierarchy Process
  Kuo-Ping Lin *(Tunghai University, Taiwan)*
  Yueh-Ju Kuo *(Tunghai University, Taiwan)*
  Ting-Yu Lin *(Tunghai University, Taiwan)*
  I-Jan Wang *(Tunghai University, Taiwan)*

Thursday, August 7, 8:00 - 9:10
SESSION 7: Product Quality: Models and Their Applications
Chair: Prof. Mingchih Chen *(Fu Jen Catholic University, Taiwan)*

Speaker: **Prof. Chun-Min Yu**

Enhancing E-Commerce Service Quality: Strategic Insights and Evaluation
   Chih-Ming Tsai *(National Chin-Yi University of Technology, Taiwan)*
   Chun-Hung Yu *(National Chi Nan University, Taiwan)*
   Chun-Min Yu *(National Chin-Yi University of Technology, Taiwan)*
   Chih-Han Chu *(National Chin-Yi University of Technology, Taiwan)*

Speaker: **Dr. Wei Shan Chang**

The Impact of Chinese Herbal Medicine on Survival in Lung Cancer Patients Receiving Targeted Therapy
   Wei Shan Chang *(Fu Jen Catholic University, Taiwan)*
   Kai-Yuan Hsiao *(Fu Jen Catholic University, Taiwan)*
   Shi-Chen Ou *(China Medical University Hospital, Taiwan)*
   Hao-Ren Yao *(National Institute of Health, USA)*
   Der-Chen Chang *(Georgetown University, USA)*
   Ben-Chang Shia *(Fu Jen Catholic University, Taiwan)*
   Mingchih Chen *(Fu Jen Catholic University, Taiwan)*
   Meng-Che Hsieh *(I-Shou University, Taiwan)*

Speakers: **Dr. Anh Van Nguyen, Dr. Thi My Hanh Nguyen**

Integrating Delphi Method into Design of Experiments for Improving Quality Control: A Case Study of Mechanical Company
   Anh-Van Nguyen *(Ho Chi Minh City University of Technology and Education, Vietnam)*
   Khac-Hieu Nguyen *(Ho Chi Minh City University of Technology and Education, Vietnam)*
   My-Hanh Nguyen *(Yuan Ze University, Taiwan)*

Speaker: **Prof. Kuen-Suan Chen**

A Smartphone Quality Evaluation Model Based on Quality Loss Function and Gamma Distribution
   Kuen-Suan Chen *(National Chin-Yi University of Technology, Taiwan)*
   Tsun-Hung Huang *(National Chin-Yi University of Technology, Taiwan)*
   Yen-Chun Huang *(National Chin-Yi University of Technology, Taiwan)*

Thursday, August 7, 9:10 - 10:20
SESSION 8: Modeling and Analysis with Machine Learning: Methods and Applications
Chair: Prof. Valentina Kuskova *(University of Notre Dame, USA)*

Speaker: **Prof. Jungyeon Choi**

A Study on the Development of Route Recommendation Based on Trajectory Clustering for Autonomous Ship
   Jungyeon Choi *(Chosun University, South Korea)*
   Taewoong Hwang *(Mokpo National Maritime University, South Korea)*
   Hyoseon Hwang *(Mokpo National Maritime University, South Korea)*
   Ik-Hyun Youn *(Mokpo National Maritime University, South Korea)*

Speaker: **Prof. Masahide Yamamoto**

Examining Future Trends in Population Changes in Tourist Destinations
   Masahide Yamamoto *(Nagoya Gakuin University, Japan)*

Speaker: **Prof. Jungyeon Choi**

Golf Chipping Analysis Using a Feed-Forward Neural Network
  Jungyeon Choi *(Chosun University, South Korea)*
  Hui Ru Ng *(University of Nebraska at Omaha, USA)*
  Jong-Hoon Youn *(University of Nebraska at Omaha, USA)*

Speaker: **Prof. Dmitry Zaytsev**

Improving Methodology for Calculating Automotive Industry Localization Rates
  Dmitry Zaytsev *(University of Notre Dame, USA)*
  Valentina V. Kuskova *(University of Notre Dame, USA)*

Thursday, August 7, 10:30 - 12:00
SESSION 9: Advances in Deep Learning and Feature Selection: Methods and Applications
Chairs: Dr. Huanjing Wang *(Western Kentucky University, USA)*
          Prof. Kehan Gao *(Eastern Connecticut State University, USA)*

Speaker: **Dr. Huanjing Wang**

Ensemble SHAP-Based Feature Selection for Credit Card Fraud Detection
  Huanjing Wang *(Western Kentucky University, USA)*
  Qianxin Liang *(Florida Atlantic University, USA)*
  Taghi M. Khoshgoftaar *(Florida Atlantic University, USA)*

Speakers: **Prof. Kehan Gao, Dr. Sarah Tasneem**

An Evaluation of CNN and Vision Transformer Models for Mars Surface Image Classification
  Kehan Gao *(Eastern Connecticut State University, USA)*
  Sarah Tasneem *(Eastern Connecticut State University, USA)*
  Taghi M. Khoshgoftaar *(Florida Atlantic University, USA)*

Speaker: **Mr. James McCormack** *

Integrating Socioeconomic Determinants with Medical Risk Factors for Diabetes
  James McCormack *(University of Wisconsin - Eau Claire, USA)*
  Naeem Seliya *(University of Wisconsin - Eau Claire, USA)*

Speaker: **Prof. Taghi Khoshgoftaar**

The STRIDE Database: Workers' Compensation Claims and Adjuster Notes
  Chelsea M. Zuvieta *(Florida Atlantic University, USA)*
  Richard Bauder *(Florida Atlantic University, USA)*
  Brian White *(Florida Atlantic University, USA)*
  Taghi M. Khoshgoftaar *(Florida Atlantic University, USA)*

Speaker: **Prof. Taghi Khoshgoftaar**

Demand Forecasting in the Aviation Aftermarket: A Gradient-Boosting Approach
  Joffrey L. Leevy *(Florida Atlantic University, USA)*
  Chelsea M. Zuvieta *(Florida Atlantic University, USA)*
  Taghi M. Khoshgoftaar *(Florida Atlantic University, USA)*

Speaker: **Dr. Taishin Nakamura**

Perturbation Strategies for the Component Assignment Problem in Three-Dimensional Consecutive-k Systems

Taishin Nakamura *(Tokai University, Japan)*

Tomoaki Akiba *(Chiba Institute of Technology, Japan)*

Koji Shingyochi *(Jumonji University, Japan)*

Speaker: **Ms. Lei Zhou**

Investigation on the Improvement of Optimization Model for Consecutive-k-out-of-n: G Systems

Lei Zhou *(Nagaoka University of Technology, Japan)*

Speaker: **Dr. Hiroyuki Ichihara**

An Algorithm for Obtaining the Pareto-Optimal Solutions of the Reservation Frame Allocations in a Complete Reservation System

Hiroyuki Ichihara *(Chubu University, Japan)*

Satoshi Mizutani *(Aichi Institute of Technology, Japan)*

Mitsutaka Kimura *(Aichi University, Japan)*

Speaker: **Dr. Natsumi Takahashi**

Improving Optimal Strategies Search for Maximum Flow Network Interdiction

Natsumi Takahashi *(National Defense Academy, Japan)*

Tetsushi Yuge *(National Defense Academy, Japan)*

Thursday, August 7, 14:10 - 15:20
SESSION 11: Advances in Reliability Networks: Methods and Applications
Chair: Prof. Cheng-Fu Huang *(Feng Chia University, Taiwan)*

Speaker: **Mr. Yu Cheng Chang** *

Constructing Reliability Models for State-dependent Resilient Systems Using Continuous-time Markov Chain

Yu-Cheng Chang *(National Taiwan University of Science and Technology, Taiwan)*

Ruey-Huei Yeh *(National Taiwan University of Science and Technology, Taiwan)*

Pei-Chen Cheng *(National Taiwan University of Science and Technology, Taiwan)*

Speaker: **Prof. Tsang-Chuan Chang**

Optimal Scheduling Problem for a Single Machine with Preventive Maintenance Constraints

Lu-Wen Liao *(National Taichung University of Science and Technology, Taiwan)*

Tsang-Chuan Chang *(National Taichung University of Science and Technology, Taiwan)*

Yen-Chia Chen *(National Taichung University of Science and Technology, Taiwan)*

Speaker: **Prof. Ping-Chen Chang**

Reliability Evaluation of a Stochastic-Flow Production Network with Automatic and Manual Production Lines

Chieh Lee *(National Sun Yat-sen University, Taiwan)*

Chen-Yu Yeh *(National Taipei University of Technology, Taiwan)*

Ping-Chen Chang *(National Taipei University of Technology, Taiwan)*

Speakers: **Dr. Ding-Hsiang Huang, Prof. Cheng-Fu Huang**

Modeling Quickest Path Reliability in Networks with Random Transmission Time
  Ding-Hsiang Huang *(Tunghai University, Taiwan)*
  Cheng-Fu Huang *(Feng Chia University, Taiwan)*

Thursday, August 7, 15:30 – 16:40
SESSION 12: Machine Learning Approaches for System Reliability Prediction and Applications
Chair: Prof. Tomoaki Akiba *(Chiba Institute of Technology, Japan)*

Speaker: **Dr. Takahiro Nakamura**

Expanded Optimal Visit Suspension Policy Corporate Sale using Reliability Model
  Takahiro Nakamura *(Tottori University, Japan)*
  Kodo Ito *(Yamato University, Japan)*
  Toshio Nakagawa *(Aichi Institute of Technology, Japan)*

Speakers: **Mr. Ryota Nekomoto *, Prof. Tomoaki Akiba**

Considering for the Forecasting Method of the Nikkei Stock Average using Deep Learning with Natural Language Processing
  Ryota Nekomoto *(Chiba Institute of Technology, Japan)*
  Tomoaki Akiba *(Chiba Institute of Technology, Japan)*

Speaker: **Dr. Kuo-Yi Lin**

Optimizing Reliability and Quality in AI-Based Manufacturing Diagnostics: Machine Learning and Risk Assessment Perspectives
  Kuo-Yi Lin *(National Kaohsiung University of Science and Technology, Taiwan)*
  Ying-Hong Yang *(National Kaohsiung University of Science and Technology, Taiwan)*
  Meng-Hua Li *(National Formosa University, Taiwan)*
  Ming-Lang Tseng *(Asia University, Taiwan)*

Speaker: **Dr. Mamoru Ohara**

On the Consistency and Variety of Automated C Source Code Generation for Training Software Defect Detectors
  Mamoru Ohara *(Tokyo Metropolitan Industrial Technology Research Institute, Japan)*
  Yuto Sugawa *(Nihon University, Japan)*
  Chisato Murakami *(Nihon University, Japan)*

Thursday, August 7, 16:40 – 17:50
SESSION 13: Network Reliability: Approaches, Methods, and Applications
Chair: Prof. Yu-Chung Tsao *(National Taiwan University of Science and Technology, Taiwan)*

Speaker: **Mr. Hsuan-Yu Chen ***

Assessing Multistate Production System Ability via Network Reliability Considering Product Classification and Rework Action
  Hsuan-Yu Chen *(National Yang Ming Chiao Tung University, Taiwan)*
  Yi-Kuei Lin *(National Yang Ming Chiao Tung University, Taiwan)*

Speaker: **Mr. Ting-Hau Shih** *

Reliability Evaluation for Identifying Critical Infrastructure in a Multistate Power Grid
  Ting-Hau Shih *(National Yang Ming Chiao Tung University, Taiwan)*
  Yi-Kuei Lin *(National Yang Ming Chiao Tung University, Taiwan)*

Speaker: **Mr. Jia-Hong Chou** *

3D Convolutional Network-Based Monitor Flicker Defect Detection: A Structured Approach for Real-World Application
  Jia-Hong Chou *(National Taiwan University of Science and Technology, Taiwan)*
  Fu-Kwun Wang *(National Taiwan University of Science and Technology, Taiwan)*
  Alfian Nur Hidayat *(National Taiwan University of Science and Technology, Taiwan)*
  Chin-Chung Wu *(Dell Taiwan Branch, Taiwan)*
  Tao-Peng Chu *(Dell Taiwan Branch, Taiwan)*

Speakers: **Ms. Pei-Hsuan Hsu** *, **Prof. Yu-Chung Tsao**

Optimal Production and Quality Policy Consider Rework and Carbon Emission
  Pei-Hsuan Hsu *(National Taiwan University of Science and Technology, Taiwan)*
  Yu-Chung Tsao *(National Taiwan University of Science and Technology, Taiwan)*
  Tsung-Hui Chen *(National Yunlin University of Science and Technology, Taiwan)*

Friday, August 8, 8:00 - 9:50
SESSION 14: Modeling and Forecasting: Methods and Applications
Chair: Prof. Florin Popentiu Vladicescu *(National University of Science and Technology POLITEHNICA Bucharest, Romania)*

Speakers: **Dr. Silvia Carpitella, Prof. Antonella Certa**, **Dr. Cinzia Muriana, Costanza Laura Parlapiano**

Decision-Making Process for Improved Sustainable Maintenance Strategies of Naval Systems
  Silvia Carpitella *(California State University, Northridge, USA)*
  Antonella Certa *(University of Palermo, Italy)*
  Cinzia Muriana *(University of Palermo, Italy)*
  Costanza Laura Parlapiano *(University of Palermo, Italy)*

Speaker: **Mr. Anas Hossini** *

ACSA: A Hybrid Approach for Designing Smart Building Maintenance Strategies
  Anas Hossini *(Lineact CESI Laboratory, France)*
  Leïla Kloul *(Paris Saclay University, France)*
  Maël Guiraud *(Lineact CESI Laboratory, France)*
  Benjamin Cohen Boulakia *(Paris Saclay University, France)*

Speaker: **Mr. Nachiket Pusadkar** *, **Dr. Silvia Carpitella**

Potentiating Forecasting Capabilities in the Retail Business
  Nachiket Pusadkar *(California State University, Northridge, USA)*
  Silvia Carpitella *(California State University, Northridge, USA)*
  Sepideh Abolghasem *(California State University, Northridge, USA)*

Speaker: **Prof. Gordon Savage**

An Efficient Inverse Solution for Mimo Dynamic Systems by a Moving Least Squares Meta-Model
  Gordon J. Savage *(University of Waterloo, Canada)*
  Young Kap Son *(Gyeongkuk National University, South Korea)*

Speaker: **Mr. Jayesh Girdhar ***, **Dr. Silvia Carpitella**

Analyzing the Impact of Economic, Social and Technical Objectives on the Optimal Selection of EVCS Locations
Jayesh Girdhar *(California State University Northridge, USA)*
Bhushan Choudhari *(California State University, Northridge, USA)*
Silvia Carpitella *(California State University, Northridge, USA)*
Xudong Jia *(California State University, Northridge, USA)*
Rasoul Narimani *(California State University, Northridge, USA)*
Daisy Lemus *(California State University, Northridge, USA)*
Crist Khachikian *(California State University, Northridge, USA)*

Speaker: **Prof. Florin Popentiu Vladicescu**

Improving Software Dependability by AI Agents
Grigore Albeanu *("Spiru Haret" University, Romania)*
Florin Popenţiu-Vlădicescu *(National University of Science and Technology "Politehnica" of Bucharest, Romania)*
Henrik Madsen *(Danish Technical University, Denmark)*

Friday, August 8, 9:50 – 11:10
SESSION 15: Modeling Reliability and Performability and Their Applications
Chair: Prof. Yoshinobu Tamura *(Yamaguchi University, Japan)*

Speaker: **Dr. Syouji Nakamura**

Reliability Calculations of Square and Cube Redundant Systems
Syouji Nakamura *(Kinjo Gakuin University, Japan)*
Kazunori Iwata *(Aichi University, Japan)*
Toshio Nakagawa *(Aichi Institute of Technology, Japan)*

Speaker: **Prof. Yoshinobu Tamura**

OSS Performability Analysis Based on Deep Multitask Learning as Multi-Objective Optimization
Yoshinobu Tamura *(Yamaguchi University, Japan)*
Adarsh Anand *(University of Delhi, India)*
Pramod Kumar Kapur *(Amity University, India)*
Shigeru Yamada *(Tottori University, Japan)*

Speaker: **Prof. Thi-Phuong Nguyen**

Reliability Evaluation of Multimodal Humanitarian Logistics in Disaster Response
Thi-Phuong Nguyen *(National Chin-Yi University of Technology, Taiwan)*

Speakers: **Prof. Toshio Nakagawa**, **Prof. Kazunori Iwata**

**Renewal Function of Weibull Distribution Using
Gamma Distribution**
Toshio Nakagawa *(Aichi Institute of Technology, Japan)*
Kazunori Iwata *(Aichi University, Japan)*

Friday, August 8, 11:10 – 13:00
SESSION 16: Reliability and Maintenance Optimization: Methods and Applications
Chair: Prof. Xufeng Zhao *(Nanjing University of Aeronautics and Astronautics, China)*

Speaker: **Dr. Jiajia Cai**

Optimal Replacement Policy of a Mission-Oriented System Under Additive Damage

Jiajia Cai *(Yangzhou University, China)*

Speaker: **Mr. Jiantai Wang** *

Condition-Based Replacement and Spare Management under Stochastic Ordering for Three-State Competition Failure System

Jiantai Wang *(Beihang University, China)*
Yu Zhao *(Beihang University, China)*
Shihan Zhou *(Beihang University, China)*

Speaker: **Prof. Qingan Qiu**

Optimal Switching Decisions in a Degrading Standby System with Switching Time Redundancy

Rongchi Sun *(Beijing Institute of Technology, China)*
Cuicui Pei *(Beijing Institute of Technology, China)*
Bosen Liu *(Beijing Institute of Technology, China)*
Qingan Qiu *(Beijing Institute of Technology, China)*

Speaker: **Dr. Wenjie Dong**

Optimal Preventive Replacement Policy for Repairable Products with Multiple Repair Attempts under Free-repair Warranty

Wenjie Dong *(Nanjing University of Aeronautics and Astronautics, China)*
Meixuan Zhang *(Nanjing University of Aeronautics and Astronautics, China)*
Naiming Xie *(Nanjing University of Aeronautics and Astronautics, China)*
Shey-Huei Sheu *(Asia University, Taiwan)*

Speaker: **Prof. Yi-Feng Niu**

Assessing Transportation Network Reliability and
Carbon Emissions Under Stochastic Capacity Degradation

Mingyang Yue *(Chongqing University of Posts and Telecommunications, China)*
Yifeng Niu *(Chongqing University of Posts and Telecommunications, China)*
Xiuzhen Xu *(Chongqing University of Posts and Telecommunications, China)*

Speaker: **Prof. Xufeng Zhao**

Hybrid Cumulative Backup Policies in Reliability Theory

Hongshuang Feng *(Nanjing University of Aeronautics and Astronautics, China)*
Xufeng Zhao *(Nanjing University of Aeronautics and Astronautics, China)*
Yilei Bu *(Jiangsu Provincial Administration for Market Regulation Data Center, China)*
Wendi Pang *(Jiangsu Provincial Administration for Market Regulation Data Center, China)*

Friday, August 8, 13:00 – 14:50
SESSION 17: Deep Learning Approaches for Reliability and Maintenance: Models and Applications
Chair: Prof. Xufeng Zhao *(Nanjing University of Aeronautics and Astronautics, China)*

Speaker: **Prof. Qingan Qiu**

Enhancing Cloud Security via Joint Optimization of Backup and Mission Abort Policies

Cuicui Pei *(Beijing Institute of Technology, China)*
Bosen Liu *(Beijing Institute of Technology, China)*
Rongchi Sun *(Beijing Institute of Technology, China)*

Qingan Qiu *(Beijing Institute of Technology, China)*

Speaker: **Mr. Haochen Luo** *

A Deep Reinforcement Learning Approach to Dynamic Extravehicular Maintenance Policy in Space Stations
  Haochen Luo *(University of Electronic Science and Technology of China, China)*
  Qin Zhang *(University of Electronic Science and Technology of China, China)*
  Yu Liu *(University of Electronic Science and Technology of China, China)*

Speaker: **Ms. Mingyue Chu** *

Robust Parameter Design of Multiple Functional Responses Based on Transfer Learning and Its Application in Additive Manufacturing
  Mingyue Chu *(Nanjing University of Science and Technology, China)*
  Jianjun Wang *(Nanjing University of Science and Technology, China)*

Speaker: **Prof. Li Yang**

Mission Risk Control Strategy via Joint Optimization of Information Acquisition and Parameter Learning
  Li Yang *(Beihang University, China)*

Speaker: **Prof. Qingan Qiu**

Joint Optimization of Mission Abort and Learning Strategies in Cloud Computing Environments
  Bosen Liu *(Beijing Institute of Technology, China)*
  Cuicui Pei *(Beijing Institute of Technology, China)*
  Rongchi Sun *(Beijing Institute of Technology, China)*
  Qingan Qiu *(Beijing Institute of Technology, China)*

Speaker: **Prof. Xufeng Zhao**

A Bayesian Deep Neural Network Model for Remaining Useful Life Prediction Using a Multi-Point Active Query Strategy
  Ying Chen *(Nanjing University of Aeronautics and Astronautics, China)*
  Taofeng Fan *(Nanjing University of Aeronautics and Astronautics, China)*
  Mingchih Chen *(Fu Jen Catholic University, Taiwan)*
  Xufeng Zhao *(Nanjing University of Aeronautics and Astronautics, China)*

Friday, August 8, 14:50 – 16:20
SESSION 18: Failure Analysis and Mechanical Reliability Modeling: Methods and Applications
Chair: Dr. Wenxue Qian *(Northeastern University, China)*

Speaker: **Dr. Lei Wang**

Comparison of Fatigue Characteristics of Single Shear Lap Joints with Two Types of Hi-lock Bolts
  Lei Wang *(Northeastern University, China)*
  Jianfeng Yang *(Suzhou Nuclear Power Research Institute Co. Ltd., China)*
  Jun Li *(Northeastern University, China)*
  Ruijin Zhang *(Northeastern University, China)*
  Wenxue Qian *(Northeastern University, China)*

Speaker: **Mr. Zhaokai He**

Research on Seismic Failure Correlation Analysis Methods for Redundant Nuclear Power Systems
  Zhaokai He *(Northeastern University, China)*
  Ruijin Zhang *(Northeastern University, China)*

Jianfeng Yang *(Suzhou Nuclear Power Research Institute Co. Ltd., China)*
Wenxue Qian *(Northeastern University, China)*
Liyang Xie *(Northeastern University, China)*

Speaker: **Mr. Xu Han** *

Research on Hybrid Redundancy Allocation for Multi-Level Repairable Heterogeneous Systems with Interval Valued Reliability of Components
Xu Han *(Zhengzhou University, China)*
Ilhan Chung *(Ulsan College, South Korea)*
Qian Qian Zhao *(Zhengzhou University, China)*

Speaker: **Dr. Ruijin Zhang**

Research on Failure Probability Analysis Method of Nuclear Power Equipment Based on Failure Data
Ruijin Zhang *(Northeastern University, China)*
Jianfeng Yang *(Suzhou Nuclear Power Research Institute Co. Ltd., China)*
Zhaokai He *(Northeastern University, China)*
Liyang Xie *(Northeastern University, China)*

Speaker: **Dr. Wenxue Qian**

Motion Trajectory Planning and Motion Accuracy Reliability Analysis of Welding Robot
Wenxue Qian *(Northeastern University, China)*
Jianfeng Yang *(Suzhou Nuclear Power Research Institute Co., Ltd, China)*
Xiaowei Yin *(Shenyang Institute of Engineering, China)*
Ruijin Zhang *(Northeastern University, China)*
Ningxiang Wu *(Northeastern University, China)*
Liyang Xie *(Northeastern University, China)*

Friday, August 8, 16:20 – 17:40
SESSION 19: Maintenance Optimization, Risk Analysis, and Feature Recognition
Chair: Prof. Xufeng Zhao *(Nanjing University of Aeronautics and Astronautics, China)*

Speaker: **Dr. Jing Wu**

A General Analytical Framework for Preventive Replacement Models in Discrete Time
Jing Wu *(Huaiyin Institute of Technology, China)*
Liqu Lin *(Nanjing University of Aeronautics and Astronautics, China)*
Jie Cui *(Huaiyin Institute of Technology, China)*
Tadashi Dohi *(Hiroshima University, Japan)*

Speaker: **Mr. Yi Chen** *

Proportional Hazards Model-Based Global Dynamic Maintenance Optimization for Multi-Component Degradation System
Yi Chen *(Beihang University, China)*
Zijian Kang *(Beihang University, China)*
Yu Zhao *(Beihang University, China)*

Speaker: **Ms. Yuhan Ma** *

Risk-Aware Task Termination Strategy for Mission-Critical Systems with Preventive Inspection Scheduling
Yuhan Ma *(Beihang University, China)*
Fanping Wei *(Beihang University, China)*

Qingan Qiu *(Beijing Institute of Technology, China)*
Li Yang *(Beihang University, China)*

Speaker: **Mr. Kui Xu** *

Research on Geometric Model Construction and Operating Feature Recognition Technology of Switchgear
  X. Kui *(Guizhou Power Grid Co., Ltd. Electric Power Science Research Institute, China)*
  L. Xin *(Guizhou Power Grid Co., Ltd. Electric Power Science Research Institute, China)*
  C. Peilong *(Guizhou Power Grid Co., Ltd. Electric Power Science Research Institute, China)*
  Z. Shijian *(Guizhou Power Grid Co., Ltd. Electric Power Science Research Institute, China)*
  D. Qichen *(Guizhou Power Grid Co., Ltd. Electric Power Science Research Institute, China)*

Friday, August 8, 17:40 – 19:15
SESSION 20: Maintenance Policies and Modeling Analysis: Applications in Society and the Social Sciences Chair: Dr. Nobuyuki Tamura (Hosei University, Japan)

Speaker: **Dr. Kenichiro Naruse**

Optimal Checkpoint for Hardwareized Artificial Neural Networks
  Kenichiro Naruse *(Josai International University, Japan)*
  Toshio Nakagawa *(Aichi Institute of Technology, Japan)*

Speaker: **Mr. Hibiki Adachi** *

Relationship between Frailty Classification of Older Adults and Residential Characteristics
  Hibiki Adachi *(Tottori University, Japan)*
  Masashi Kuwano *(Tottori University, Japan)*
  Yuka Minamino *(Tottori University, Japan)*
  Mio Hosoe *(Tottori University, Japan)*

Speaker: **Mr. Yutaka Azuma** *

Analysis of Loan Agreement using Deep Learning with a Regularization Term
  Yutaka Azuma *(Tottori University, Japan)*
  Masashi Kuwano *(Tottori University, Japan)*
  Yuka Minamino *(Tottori University, Japan)*
  Mio Hosoe *(Tottori University, Japan)*

Speaker: **Dr. Nobuyuki Tamura**

Numerical Evaluation of the Effectiveness of an Extended Warranty based on a Periodical Replacement Model
  Nobuyuki Tamura *(Hosei University, Japan)*

Speaker: **Mr. Jiaxuan Zhan** *

A Trajectory-Learning-Driven Lifetime Prognosis Approach Capturing Nonlinear Degradation Heterogeneity
  Jiaxuan Zhan *(Beihang University, China)*
  Binshi Wang *(Beihang University, China)*
  Fanping Wei *(Beihang University, China)*

* Denotes Student Speaker

We would like to express our deepest gratitude and thanks to all Authors and Speakers who have enriched this conference with their invaluable knowledge and exceptional research works.

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We hope this conference would serve as a platform for establishing valuable connections and fruitful collaborations for all participants that will extend beyond this event.

Conference Organizer

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