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Awards

ISSAT RQD 2014 Best Paper Award

Replacement First and Last for a Parallel System

Mingchih Chen (Fu Jen Catholic University, Taiwan)

Xufeng Zhao (Aichi Institute of Technology, Japan)

Toshio Nakagawa (Aichi Institute of Technology, Japan)

ISSAT RQD 2014 Best Student Paper Award

Optimum Life Testing Plans under Progressive Censoring

Ritwik Bhattacharya (Indian Statistical Institute, India)

Biswabrata Pradhan (Indian Statistical Institute, India)

Anup Dewanji (Indian Statistical Institute, India)

Conference at a Glance

THURSDAY, AUGUST 6	FRIDAY, AUGUST 7	SATURDAY, AUGUST 8
8:00 - 9:00 Registration / Continental Breakfast Grand Ballroom Prefunction area (Floor 2)	8:00 - 8:15 Registration / Continental Breakfast Grand Ballroom Prefunction area (Floor 2)	8:15 - 8:30 Registration / Continental Breakfast Grand Ballroom Prefunction area (Floor 2)
9:00 - 9:15 Welcome - Awards Presentation Grand Ballroom A (Floor 2)	8:15 - 9:30 Technical Sessions Grand Ballroom A & B (Floor 2)	8:30 - 10:00 Technical Sessions Grand Ballroom A & B (Floor 2)
9:20 - 10:35 Technical Sessions Grand Ballroom A & B (Floor 2)	9:30 - 9:45 Coffee Break Grand Ballroom Prefunction area (Floor 2)	10:00 - 10:15 Coffee Break Grand Ballroom Prefunction area (Floor 2)
10:35 - 10:50 Coffee Break Grand Ballroom Prefunction area (Floor 2)	9:45 - 11:45 Tutorial Session Grand Ballroom A (Floor 2)	10:15 - 12:15 Technical Sessions Grand Ballroom A & B (Floor 2)
10:50 - 12:05 Technical Sessions Grand Ballroom A & B (Floor 2)	12:00 - 1:00 Conference Luncheon Riverview Room B & C (Floor 3)	12:15 Adjourn!
1:15 - 2:45 Technical Sessions Grand Ballroom A & B (Floor 2)	1:15 - 2:45 Technical Sessions Grand Ballroom A & B (Floor 2)	
2:45 - 3:00 Coffee Break Grand Ballroom Prefunction area (Floor 2)	2:45 - 3:00 Coffee Break Grand Ballroom Prefunction area (Floor 2)	
3:00 - 5:00 Panel Session Grand Ballroom A (Floor 2)	3:00 - 5:00 Technical Sessions Grand Ballroom A (Floor 2)	
5:30 - 7:30 Welcome Reception Columbus Ballroom A		

Technical Sessions at a Glance

	GRAND BALLROOM A			GRAND BALLROOM B			
Thursday, Aug. 6	Session No. Title		Session No. Title				
9:20 - 10:35	1	Statistical Reliability Modeling & Its Applications		2	Quality Engineering in Design		
10:50 - 12:05	3	Maintenance and Reliability Modeling & Optimization		4	Security Analytics & Modeling		
1:15 - 2:45	5	Multistate Network Reliability & Process Improvement		6	Software Reliability Modeling and Its Applications		
3:00 - 5:00	7 & 8 Panel Session: Challenges a		nd Opportunities in Reliability				
Friday, Aug. 7	Session No. Title		Session No. Title				
8:15 - 9:30	9		tware Quality & Reliability deling	10	System Reliability, Safety and Failure Analysis		
9:45 - 11:45			Burn-In and Environmental Stress - Statistical Quantification				
1:15 - 2:45	13		Multi-State System Reliability Modeling & Its Applications		Security Analytics & Applications		
3:00 - 5:00	15	Mechanical Reliability Modeling & Prediction		16	Software Quality and Reliability Assessment and Applications		
Saturday, Aug. 8	Session No. Title		Session No. Title				
8:30 - 10:00	17	Automotive Reliability Modeling & Distribution Networks		18	Maintenance Optimization & Its Applications		
10:15 - 12:15	19		Reliability and Maintenance Modeling & Applications		System Modeling & Simulation & Its Applications		

Technical Sessions

SESSION 1: Statistical Reliability Modeling & Its Applications

Chair: Prof. D. Gary Harlow (Lehigh University, USA)

Reliability Metrics and Key Performance Indicators for Cloud-Based Virtualization Applications

Xuemei Zhang (AT&T, USA)
Carolyn Johnson (AT&T, USA)

Sequential ALT Plans for Systems with Mixture of Units

Yao Cheng (Rutgers University, USA) E. A. Elsayed (Rutgers University, USA)

Additive Manufacturing of Ti6Al4V: Statistical Modeling

D. Gary Harlow (Lehigh University, USA)

SESSION 2: Quality Engineering in Design

Chair: Prof. Gordon Savage (Univ. of Waterloo, Canada)

Development of Mathematical Model for Quality-Cost Optimization

N. V. R. Naidu (M S Ramaiah Institute of Technology, India)

M. Shilpa (M S Ramaiah Institute of Technology, India)

Pareto Frontier in Economic-Statistical Design of a Dynamic *c* Chart

Antonella Certa (Università degli Studi di Palermo, Italy)

Stability Analysis of Uncertain Systems Using Singular Value Decomposition-Based Stability Metric

Young Kap Son (Andong National University, South Korea)

Gordon J. Savage (University of Waterloo, Canada)

SESSION 3: Maintenance and Reliability Modeling & Optimization

Chair: Dr. Mitsutaka Kimura (Gifu City Women's College, Japan)

Optimal Checkpoint Times for Grouped Redundant Arrays Inexpensive Computer Nodes (GRAICN)

Kenichiro Naruse (Nagoya Sangyo University, Japan) Toshio Nakagawa (Aichi Institute of Technology, Japan)

Reliability Evaluations of a Control System Connected with the Network

Mitsuhiro Imaizumi (Aichi Gakusen University, Japan) Mitsutaka Kimura (Gifu City Women's College, Japan)

An Extended Model of Real-Time Distributed Systems for Cloud Computing

Mitsutaka Kimura (Gifu City Women's College, Japan) Mitsuhiro Imaizumi (Aichi Gakusen University, Japan) Toshio Nakagawa (Aichi Institute of Technology, Japan)

SESSION 4: Security Analytics & Modeling

Chair: Prof. Taghi M. Khoshgoftaar (Florida Atlantic Univ., USA)

Attack Commonalities: Extracting New Features for Network Intrusion Detection

Maryam M. Najafabadi (Florida Atlantic Univ., USA) Taghi M. Khoshgoftaar (Florida Atlantic Univ., USA) Charles Wheelus (Florida Atlantic Univ., USA)

Concurrency Analysis of the Universal Physical Access Control System (UPACS)

Clyde Carryl (Florida Atlantic University, USA)
Bassem Alhalabi (Florida Atlantic University, USA)
Ravi Shankar (Florida Atlantic University, USA)

The Importance of Representative Network Data on Classification Models for the Detection of Specific Network Attacks

Maryam M. Najafabadi (Florida Atlantic Univ., USA) Taghi M. Khoshgoftaar (Florida Atlantic Univ., USA) Clifford Kemp (Florida Atlantic Univ., USA)

SESSION 5: Multistate Network Reliability & Process Improvement

Chair: Dr. Ping-Chen Chang (National Taiwan University of Science & Technology, Taiwan)

Machine Scheduling with Availability and Transportation Considerations

Jason Chao-Hsien Pan (Takming University of Science and Technology, Taiwan)
Chi-Shiang Su (National Taipei University of Technology, Taiwan)

The Study of Multipath TCP Networks under Latency with Retransmission Mechanism

Yu-Chieh Liao (National Taiwan Univ of Sci & Tech, Taiwan)

Yi-Kuei Lin (National Taiwan Univ of Sci & Tech, Taiwan)

Chih-Li Pan (National Taiwan Univ of Sci & Tech, Taiwan)

Developing Process Quality Indices Based on Six Sigma Quality Level

Kuen-Suan Chen (National Chin-Yi University of Technology, Taiwan)

Tsang-Chuan Chang (National Chin-Yi University of Technology, Taiwan)

Yun-Tsan Lin (National Chin-Yi University of Technology, Taiwan)

Confidence-Based Reliability Evaluation of Multistate Production Network with Process Improvement

Yun-Ling Cho (National Taiwan Univ of Sci & Tech, Taiwan)

Ping-Chen Chang (National Taiwan Univ of Sci & Tech, Taiwan)

Yi-Kuei Lin (National Taiwan Univ of Sci & Tech, Taiwan)

SESSION 6: Software Reliability Modeling and Its Applications

Chair: Dr. Yoshinobu Tamura (Yamaguchi Univ., Japan)

Optimal Maintenance Problem Based on Hazard Rate Model for Mobile Clouds

Yumi Nobukawa *(Tottori University, Japan)*Yoshinobu Tamura *(Yamaguchi University, Japan)*Shigeru Yamada *(Tottori University, Japan)*

Estimating Optimal Software Release Time Based on a Change-Point Model by Multi-Attribute Utility Theory

Yuka Minamino *(Tottori University, Japan)*Shinji Inoue *(Tottori University, Japan)*Shigeru Yamada *(Tottori University, Japan)*

Software Quality Prediction Based on Generalized Linear Models

Shinji Inoue (Tottori University, Japan)
Shigeru Yamada (Tottori University, Japan)

Reliability Assessment Based on Jump Diffusion Model for Cloud Computing under the Influence of Big Data

Yoshinobu Tamura *(Yamaguchi University, Japan)* Shigeru Yamada *(Tottori University, Japan)*

SESSIONS 7 & 8: Challenges and Opportunities in Reliability

Chair: Dr. Feng-Bin Sun (Tesla Motors, USA)

Panelists:

Prof. Hoang Pham (Rutgers University, USA)

Reliability Computing

Prof. Balbir Dhillon (University of Ottawa, Canada)

Human Reliability and Safety

Prof. Gary Harlow (Lehigh University, USA)

Mechanical Reliability

Dr. Alexander Parkhomovsky (JDSU, USA)

Design for Reliability from Failure
Physics Perspective

Dr. Zishan Wei (MKS Instruments, USA)

Reliability Testing and Management

SESSION 9: Software Quality & Reliability Modeling Chair: Dr. Kehan Gao (Eastern Connecticut State Univ., USA)

A Framework of Combining Data Pre-Processing Methods and Boosting for Software Quality Classification

Taghi M. Khoshgoftaar (Florida Atlantic Univ., USA) Kehan Gao (Eastern Connecticut State Univ., USA) Amri Napolitano (Florida Atlantic University, USA) Lofton A. Bullard (Florida Atlantic University, USA)

Operational Software Reliability Prediction by Random Forest Based on Development Project Data with Qualitative Variables

Y. Arai *(Hosei University, Japan)* M. Kimura *(Hosei University, Japan)*

Filter-Based Feature Subset Selection and Data Sampling for Fault-Prone Program Module Prediction

Kehan Gao (Eastern Connecticut State University, USA)

Taghi M. Khoshgoftaar (Florida Atlantic University, USA)

Amri Napolitano (Florida Atlantic University, USA)

SESSION 10: System Reliability, Safety and Failure Analysis

Chair: Prof. B.S. Dhillon (University of Ottawa, Canada)

A SHELF - Swiss Cheese Model for Aviation Safety

Po Chung Tong (The Hong Kong Polytechnic University, Hong Kong)
Hei Tung Chau (The Hong Kong Polytechnic University, Hong Kong)
Tsun Tai Wong (The Hong Kong Polytechnic University, Hong Kong)

Combinatorial Algorithm of Wordlength Pattern for Twolevel Fractional Factorial Designs

Jen-der Day (National Kaohsiung University of Applied Sciences, Taiwan)

Transportation System Failures: An Investigative Study

B.S. Dhillon (University of Ottawa, Canada)

SESSIONS 11 & 12: Tutorial Session

Chair: Prof. Hoang Pham (Rutgers University, USA)

Reliability Burn-In and Environmental Stress Screening - Statistical Quantification

Dr. Feng-Bin Sun (HGST, a Western Digital Company, USA)

SESSION 13: Multi-State System Reliability Modeling & Its Applications

Chair: Prof. Yao Hsu (Kainan University, Taiwan)

A Study on Managerial Strategy of Greenhouse Factory

Jyh-Wen Ho (Aletheia University, Taiwan)

An Optimal Replacement Policy for Systems with Multi-State Aging Components

Chun-Ho Wang (National Defense University, Taiwan) Chao-Hui Huang (R.O.C. Naval Academy, Taiwan)

On Reliability Evaluation of a Timed Stochastic-Flow Network

Shin-Guang Chen (Tungnan University, Taiwan)

Analysis of Fatigue Life of Electronic Package under Thermal Cycling Condition by Acceleration Model

Yao Hsu (Kainan University, Taiwan) Wen-Fang Wu (National Taiwan University, Taiwan) Yi-An Lu (National Taiwan University, Taiwan)

SESSION 14: Security Analytics & Applications

Chair: Prof. Taghi Khoshgoftaar (Florida Atlantic Univ., USA)

A Survey on Feature Selection for Intrusion Detection

Richard Zuech (Florida Atlantic University, USA)
Taghi M. Khoshgoftaar (Florida Atlantic Univ., USA)

Security Analysis of the Universal Physical Access Control System (UPACS)

Clyde Carryl (Florida Atlantic University, USA)
Bassem Alhalabi (Florida Atlantic University, USA)
Taghi Khoshgoftaar (Florida Atlantic University, USA)

A Comparison of Feature Selection Strategies for Identifying Malicious Network Sessions

Maryam M. Najafabadi (Florida Atlantic Univ., USA) Taghi M. Khoshgoftaar (Florida Atlantic Univ., USA) Amri Napolitano (Florida Atlantic University, USA)

Survey on Selected Features Used for Network Level Attack Detection

Chad Calvert (Florida Atlantic University, USA)

Taghi M. Khoshgoftaar (Florida Atlantic Univ., USA)

Maryam M. Najafabadi (Florida Atlantic Univ., USA)

SESSION 15: Mechanical Reliability Modeling & Prediction

Chair: Prof. Liyang Xie (Northeastern University, China)

CFD Analysis of Turbofan Engine Blade Temperature

Po Chung Tong (The Hong Kong Polytechnic University, Hong Kong)
Tsun Tat Wong (The Hong Kong Polytechnic University, Hong Kong)

Bending Fatigue Life Analysis of Heavy-load Spiral Bevel Gear Based on Computer Simulation Technology

Yan-zhong Wang (Beihang University, China)
Yang Liu (Beihang University, China)
Zu-zhi Zhang (China North Vehicle Research Institute, China)

Wen Tang (Beihang University, China)
Yan-yan Chen (Beihang University, China)
Wen-zhen Zhao (Laoning Institute of Science and Technology, China)

Tie Wang (Taiyuan University of Technology, China)
Xue-jun He (Laoning Institute of Science and
Technology, China)

Effect of Rib Ratios on Turbulent Intensity of a Ribbed-Wall Channel

K.K. Yuen (The Hong Kong Polytechnic University, Hong Kong)

Eric T.T. Wong (The Hong Kong Polytechnic University, Hong Kong)

Development and Implementation of an Experimental Test Bench for Foam Characterization in Oil & Gas Applications

- G. Giacchetta (Università Politecnica della Marche, Italy)
- F. Corvaro (Università Politecnica della Marche, Italy)
- G. Nardini (Università Politecnica della Marche, Italy)
- M. Benucci (Università Politecnica della Marche, Italy)
- D. Dall'Acqua (Università Politecnica della Marche, Italy)
- B. Marchetti (Università degli Studi eCampus, Italy)

Reliability Estimation of Four-Hydraulic-Cylinder Propulsion Unit of Tunnel Boring Machine

Liyang Xie (Northeastern University, China)

SESSION 16: Software Quality and Reliability Assessment and Applications

Chair: Dr. Shinji Inoue (Tottori University, Japan)

Software Quality Assessment Modeling for Agile Development

Shigeru Yamada (Tottori University, Japan) Ryosuke Kii (Tottori University, Japan)

Hazard Rate Model Considering Various Factors for Mobile Clouds

Mitsuho Matsumoto *(Tottori University, Japan)*Yoshinobu Tamura *(Yamaguchi University, Japan)*Shigeru Yamada *(Tottori University, Japan)*

All-Stage Truncated Modeling with Multiple Change-Points for Software Reliability Assessment

Saki Taniguchi (Tottori University, Japan) Shinji Inoue (Tottori University, Japan) Shigeru Yamada (Tottori University, Japan)

Discrete Software Reliability Growth Model Based on a Generalized Linear Modeling Approach

Yasutaka Iwasaki *(Tottori University, Japan)*Shinji Inoue *(Tottori University, Japan)*Shigeru Yamada *(Tottori University, Japan)*

SESSION 17: Automotive Reliability Modeling & Distribution Networks

Chair: Prof. Songlin Zheng (University of Shanghai for Science and Technology, China)

Secure Automotive Embedded System Using a Lightweight Block Cipher Against Malicious Trojan Attack

- M. Yoshikawa (Meijo University, Japan)
- Y. Hayashi (Meijo University, Japan)
- Y. Nozaki (Meijo University, Japan)
- K. Asahi (Meijo University, Japan)

Optimal Crew Site Visit to Improve the Reliability of Electricity Distribution Networks

Dzung T. Phan (IBM T.J. Watson Research Center, USA)

Yada Zhu (IBM T.J. Watson Research Center, USA)
Jayant Kalagnanam (IBM T.J. Watson Research
Center, USA)

Assessment and Visualization of Reliability Relevant Product Characteristics for the Application of Bayes Analysis

- V. Schweizer (University of Stuttgart, Germany)
- F. Jakob (University of Stuttgart, Germany)
- M. Bartholdt (University of Stuttgart, Germany)
- B. Bertsche (University of Stuttgart, Germany)

An Optimized Target Spectrum Selection Method for the Automotive Durability Test

Jiawei Yu (University of Shanghai for Science and Technology, China)

Songlin Zheng (University of Shanghai for Science and Technology, China)

Jinzhi Feng (University of Shanghai for Science and Technology, China)

Lihui Zhao (University of Shanghai for Science and Technology, China)

SESSION 18: Maintenance Optimization & Its Applications

Chair: Prof. Syouji Nakamura (Kinjo Gakuin Univ., Japan)

Optimal Replacement Policy with Jobs and Loss Cost from Failure to Given Time Point

Satoshi Mizutani (Aichi University of Technology, Japan)

Toshio Nakagawa (Aichi Institute of Technology, Japan)

Research on Testability Design Analyzing Process of Products

Qi Song (Beijing University of Aeronautics and Astronautics, China)

Wenjin Zhang (Beijing University of Aeronautics and Astronautics, China)

Ping Sun (Beijing University of Aeronautics and Astronautics, China)

Stochastic Maintenance Model of Commercial Airframe with Damage Level and Crack Number

Kodo Ito (Kinjo Gakuin University, Japan)
Toshio Nakagawa (Aichi Inst. of Technology, Japan)

Optimal Garbage Collection Scheduling Times Policies for SSD

Syouji Nakamura (Kinjo Gakuin University, Japan) Mingchih Chen (Fu Jen Catholic University, Taiwan) Xufeng Zhao (Aichi Institute of Technology, Japan) Toshio Nakagawa (Aichi Inst. of Technology, Japan)

SESSION 19: Reliability and Maintenance Modeling & Applications

Chair: Dr. Elsayed Elsayed (Rutgers University, USA)

A Dependent-Multivariate Data Analysis Method by Skewed-RBF Network Based on FGM Copula

Shuhei Ota (Hosei University, Japan) Mitsuhiro Kimura (Hosei University, Japan)

Weibull Lifetime Model Considering Stress-Dependent Parameters

J. Juskowiak (University of Stuttgart, Germany)

M. Bartholdt (University of Stuttgart, Germany)

B. Bertsche (University of Stuttgart, Germany)

Improved Gamma Process for Degradation Analysis under Non-linear Condition

Zhaoyi Fan (Soochow University, China) Hua Ju (Soochow University, China) FengBin Sun (HGST, a Western Digital Company, USA)

Dependence and Maintenance of Series Repairable Systems

Isha Dewan *(Indian Statistical Institute, India)*Yann Dijoux *(Université de Technologie de Troyes, France)*

A Bivariate Degradation Model for Sequence-Dependent Stress Testing

Jingbo Guo (Rutgers University, USA) E. A. Elsayed (Rutgers University, USA)

SESSION 20: System Modeling & Simulation & Its Applications

Chair: Prof. Antonio C. Caputo (Univ. of Roma Tre, Italy)

A Fuzzy Parameter to Characterize the Uncertainty in the Plant Layout Design

Antonella Certa (Univ. degli Studi di Palermo, Italy) Mario Enea (Università degli Studi di Palermo, Italy) Giacomo Galante (Università degli Studi di Palermo, Italy)

A Method for Determining Safety Requirements

Shiyu Gong (National University of Defense
Technology, China)
Bohua Li (National University of Defense Technology,
China)
Pengcheng Luo (National University of Defense
Technology, China)

Optimizing Turbine Blade Coating Thickness: A Simulation Approach

W. M. Wong (The Hong Kong Polytechnic University, Hong Kong)
T. T. Wong (The Hong Kong Polytechnic University,

T. T. Wong (The Hong Kong Polytechnic University, Hong Kong)

Assessment of General Equipment Support System Construction Ability Risk

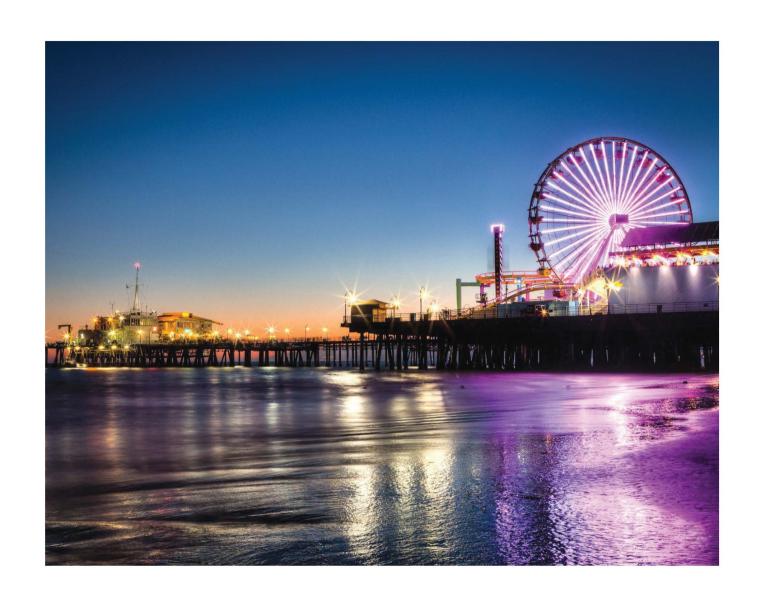
Chun-liang Chen (Academy of Armored Force Engineering, China)
Ou Qi (Academy of Armored Force Engineering, China)

Modeling Errors in Continuous Parts Supply Processes for Assembly Lines Feeding

Antonio C. Caputo (University of Roma Tre, Italy)
Pacifico M. Pelagagge (University of L'Aquila, Italy)
Paolo Salini (University of L'Aquila, Italy)

Thank you for contributing and participating in the 21st ISSAT RQD conference

We hope you enjoy the entire program



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