



APARM 2026

The 12th Asia-Pacific International Symposium on
**ADVANCED RELIABILITY
AND MAINTENANCE MODELING**

Singapore

July 1-4, 2026



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Welcome Message

Welcome you all to the 12th Asia-Pacific International Symposium on Advanced Reliability and Maintenance Modeling (APARM 2026), which will be held in Singapore at National University of Singapore - Shaw Foundation Alumni House during July 1-4, 2026. This conference is sponsored and organized by Department of Industrial Systems Engineering and Management, National University of Singapore.

This symposium has grown into a premier forum for researchers, engineers, and practitioners from academia, industry, and government agencies to exchange cutting-edge ideas, share recent advancements, and discuss emerging challenges in the fields of reliability engineering, risk assessment, and maintenance modeling. With an exciting lineup of keynote speeches, technical sessions, we aim to provide a vital platform for fostering international collaboration and knowledge transfer across disciplines and borders.

We are truly grateful to our keynote speakers, session organizers, authors, and reviewers for their invaluable contributions. Special thanks also go to our sponsors and supporters, whose generosity and commitment have made this event possible.

We encourage all attendees to actively engage in the technical sessions, workshops, and social events, and to take full advantage of the opportunities for networking and professional development. Whether you are a seasoned expert or a young researcher, your participation is what makes this symposium a vibrant and rewarding experience. Wishing you a productive, enjoyable, and memorable symposium.

Conference Organizing Committees
APARM 2026
Singapore



Conference Committees

Honorary Chairs

Yi-Kuei Lin, National Yang Ming Chiao Tung University

Loon Ching Tang, National University of Singapore

Min Xie, City University of Hong Kong

General Chair

Zhisheng Ye, National University of Singapore

Local Organization Chairs

Nan Chen, National University of Singapore

Qiuzhuang Sun, Singapore Management University

Steering Committee

Chien-Wei Wu, National Tsing Hua University

Seong-joon Kim, Chosun University

Sarah Marshall, University of Auckland

Hiroyuki Okamura, Hiroshima University

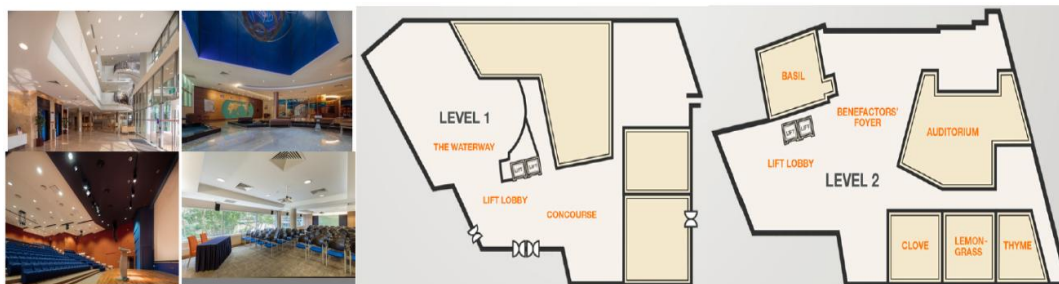
Jingyuan Shen, Nanjing University of Science and Technology

Zhigang Tian, University of Alberta

Zhisheng Ye, National University of Singapore

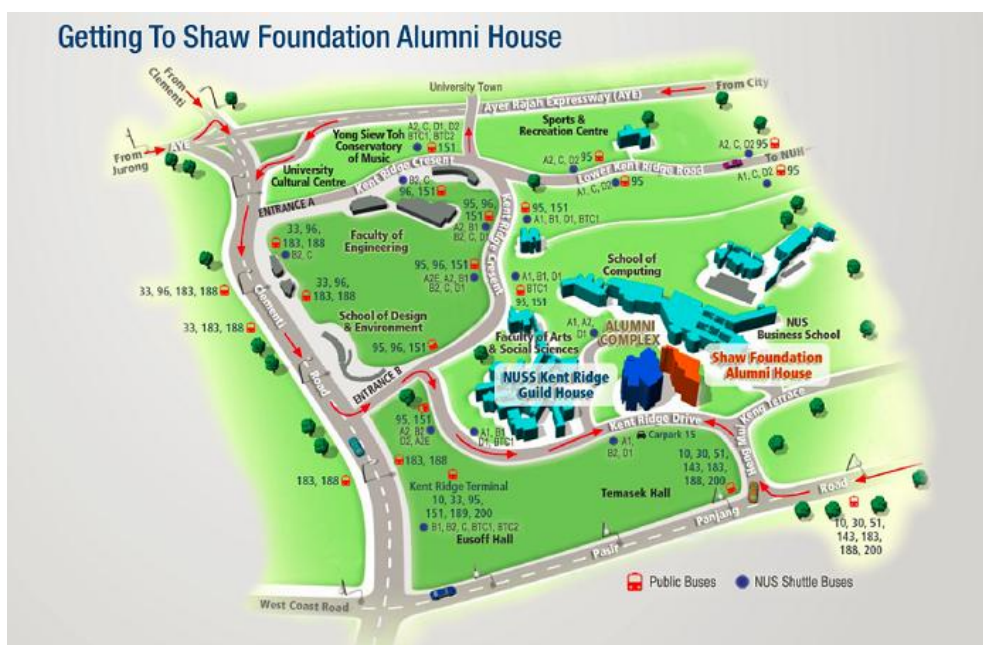


Conference Venue



National University of Singapore- Shaw Foundation Alumni House

Address: 11 Kent Ridge Drive, Singapore 119244



Accommodation: The Ridge

Room Type	Rate (Per Room Per Night)	Inclusions
Deluxe Room - King / Twin 24sqm - Max. 2 persons	S\$240.00 Nett (Single Occupancy with breakfast for 1) OR S\$265.00 Nett (Double Occupancy with breakfast for 2)	- Daily Buffet Breakfast - Complimentary Internet - Access to Hotel Facilities - In-room Filtered Water Dispensers - Coffee & Tea - In-room Safe - Mini Refrigerator - Towel & Bathroom Toiletries - Standing Shower

*All rates quoted in "nett" inclusive of GST unless stated otherwise. Rates are subject to periodic revision at the discretion of the University.

For APARM delegate, please reserve your room by sending email to booktheridge@nus.edu.sg.



Getting to The Ridge from Singapore Changi Airport:

By Taxi	By MRT and NUS Internal Shuttle (ISB)
Reach The Ridge in comfort and speed— just 30 minutes by taxi from Changi Airport, offering a direct and cost- effective journey	Travel by MRT and connect to the NUS Internal Bus Shuttle— taking about 2 hours— and enjoy a glimpse of the city along the way.

 **Closest from Kent Ridge MRT** – take the NUS Internal Shuttle from Kent Ridge MRT or Opp Kent Ridge MRT bus stops, and alight at walking distance stops to The Ridge

 **Nearest Bus Stops via NUS Internal Shuttle Bus**

Bus Stop	NUS Internal Shuttle No.
COM 3	D2 (from Opp KR MRT)
Central Library	A1 (from KR MRT)
Opp NUSS	A2 (from Opp KR MRT)

Scan the QR code to access NUS NextBus for live shuttle timings and the NUS ISB Shuttle Map.





Conference Tips

- Please take care of your valuable articles and don't place them in the conference rooms or other public place to prevent from being lost.
- Please don't throw your name card away when you don't need it, just return it to the registration table.
- Conference Organizers do not provide accommodation, please reserve your hotel room in advance
- Please keep your Lunch/ Dinner Coupon in a safe place, we will not give you a new one if get lost.



Author Guideline

1 Onsite Registration

Registration desk (**Benefactors' Foyer**) → Inform the staff of your paper ID → Sign-in → Claim your conference kit.

2 Devices Provided by the Organizer

Laptops (with MS-Office & Adobe Reader) / Projectors & Screen / Laser Sticks

3 Materials Provided by the Presenter

Oral Session: Slides (pptx or pdf version).

Official Language: **English**.

4 Duration of Each Presentation

Keynote Speech: 40min, including Q&A.

Oral Presentation: 15min, including Q&A.

5 Notice

※ Please wear your delegate badge (name tag) for all the conference activities. Lending your participant card to others is not allowed.

※ Please take good care of your valuables at any time during the conference. The conference organizer does not assume any responsibility for the loss of personal belongings of the participants during conference day.

※ **UTC+8 Singapore Time. Please be aware of time difference between this and your region/country.**

6 Online Presentation Tips

	Meeting ID	Link
	884 6540 1348	https://us02web.zoom.us/j/88465401348

Note:

We recommend that you install the Zoom platform on your computer before the conference starts. New users can participate in the Zoom meeting without registration.

Participants who are going to do an online presentation are required to join the rehearsal in Zoom on **July 01**. Feel free to leave after you finish the test.

◆Name Setting

Author: Session Number-Paper ID-Name

Listener: Listener-Name



Conference Agenda

➤ Day 1 | July 1, 2026 (Wednesday, UTC +8)

Time	Activity	Venue
14:00-17:00	Sign in & Conference Kit Collection	Benefactors' Foyer
10:00-10:30	Online Test	Zoom ID: 884 6540 1348

➤ Day 2- Morning | July 2, 2026 (Thursday, UTC +8)

Time	Event	Activity	Venue
Host By: Xiujie Zhao, Tianjin University			
09:00-09:10	Address from Conference Chair	Zhisheng Ye, National University of Singapore	2F·Auditorium
	Address from Steering Committee Chair	Chien-Wei Wu, National Tsing Hua University	
09:10-09:50	Keynote Speech I	Prof. David W. Coit Rutgers University Speech Title: Systems of Dependent Degradation Processes: Modeling Alternatives and Research Challenges	
09:50-10:30	Group Photo & Coffee Break		
Host By: Nan Chen, National University of Singapore			
10:30-11:10	Keynote Speech II	Prof. Gregory Levitin NOGA - Israel Independent System Operator Speech Title: Protecting Complex Systems from Disasters and Deliberate Attacks	
11:10-11:50	Keynote Speech III	Prof. Xiao Liu Georgia Institute of Technology Speech Title: Statistical Learning and Sequential Designs for Reduced-Order Modeling of Parametric Systems	
12:00-13:30	Lunch @ Coriander		



➤ Day 2- Afternoon | July 2, 2026 (Thursday, UTC +8)

Venue Time	2F·Lemongrass	2F·Basil	1F·Sesame	2F·Coriander
13:30-16:00	Best Student Paper Competition <i>System Reliability Modeling, Safety Analysis, and Life Prediction</i>	Best Paper Competition <i>Software Reliability Analysis and Degradation Models</i>	Special Session I-A <i>Data-Driven Approaches for Complex Industrial Systems</i>	Special Session V-A <i>System Reliability for Industrial Applications: Modeling and Analytics</i>
16:10-17:00	Campus Visit (Optional)			

➤ Day 3 | Morning | July 3, 2026 (Friday, UTC +8)

Venue Time	2F·Lemongrass	2F·Coriander	1F·Sesame
09:00-10:30	Special Session I-B <i>Data-Driven Approaches for Complex Industrial Systems</i>	Special Session X-A <i>Frontiers in Dynamics Modelling and Reliability Assessment of Advanced Equipment</i>	Special Session VIII-A <i>Modeling and Optimization for System Reliability</i>
10:30-10:45	Coffee Break		
10:45-12:30	Special Session I-C <i>Data-Driven Approaches for Complex Industrial Systems</i>	Special Session X-B <i>Frontiers in Dynamics Modelling and Reliability Assessment of Advanced Equipment</i>	Special Session VIII-B <i>Modeling and Optimization for System Reliability</i>
12:15-13:30	Lunch @ Coriander		

➤ Day 3 | Afternoon | July 3, 2026 (Friday, UTC +8)

Venue Time	2F·Lemongrass	2F·Coriander	1F·Sesame	2F·Basil
13:30-15:15	Special Session II <i>Modeling and Applications for Stochastic and Data-driven Systems</i>	Special Session III <i>Frontiers in Process Performance Evaluation Using Statistical Techniques</i>	Special Session IV <i>Integrating Quality Design Methods and Strategic Management</i>	Special Session V-B <i>System Reliability for Industrial Applications: Modeling and Analytics</i>
15:15-15:45	Poster Session @ 2F·Clove <i>Component and Product Reliability Verification and Fault Diagnosis</i>			



15:45-18:00	Special Session VI <i>Intelligent Reliability Modeling, Prognostics, and Decision-Making for Complex Engineering Systems</i>	Special Session VII <i>Reliability Modeling and Maintenance Optimization for Stochastic Industrial Systems</i>	Special Session XI <i>AI-Enabled Reliability, Maintainability, and Safety Engineering</i>	Oral Session <i>Efficient statistical algorithms for reliability models and software reliability testing</i>
18:00-20:00	Award Banquet @ Kent Ridge Guild House			

➤ **Day 4 | July 4, 2026 (Saturday, UTC +8) -Academic Exchange for Attendees**



Keynote Speaker



Prof. David W. Coit

Rutgers University

Speech Title: Systems of Dependent Degradation Processes: Modeling Alternatives and Research Challenges

Time: 09:10-09:50, July 2 | **Onsite Room:** 2F·Auditorium

Biography: David Coit is a Professor in the Department of Industrial & Systems Engineering at Rutgers University, Piscataway, NJ, USA. He has also had visiting professor positions at Universite Paris-Saclay, Paris, France and Tsinghua University, Beijing, China. His current teaching and research involves system reliability modeling and optimization, and energy systems optimization. He has over 140 published journal papers and over 100 peer-reviewed conference papers (h-index 70), including the most highly cited paper ever in Reliability Engineering & System Safety (RESS) and the 4th most cited paper in IEEE Transactions on Reliability. He is currently an Associate Editor for RESS and Journal of Risk and Reliability and was previously an Associate or Department Editor for IEEE Transactions on Reliability and IISE Transactions. His research has been funded by USA National Science Foundation (NSF), including a NSF CAREER grant to develop new reliability optimization algorithms considering uncertainty. He has been the recipient of the P. K. McElroy award, Alain O. Plait award and William A. J. Golomski award for best papers and tutorials at the Reliability and Maintainability Symposium (RAMS). Prof. Coit received a BS degree in mechanical engineering from Cornell University, an MBA from Rensselaer Polytechnic Institute (RPI), and MS and PhD in industrial engineering from the University of Pittsburgh. He is a fellow of the Institute of Industrial & Systems Engineers (IISE).

Abstract: System reliability models and analyses involving multiple failure processes are challenging when the failure or degradation processes are competing and dependent. For reliability modeling of complex multiple component systems, component failure time and/or degradation are often assumed to be independent as a simplifying assumption, but this is not always appropriate for actual engineering applications. If one component degrades or fails prematurely, it is possible or even likely that other components also degrade or fail prematurely given the shared working environment or other reasons. This provides evidence of dependent component failure times or failure processes. When system models are extended to complex systems considering dependency, different perspectives and models are needed for system reliability modeling. These different approaches for modeling the reliability for systems with dependent failure processes are reviewed, a new model is presented based on the superposition of gamma processes, and research challenges are presented. Models for dependent failure and/or degradation processes can be formulated using joint multivariate distributions, copula functions, Markov chains, or random effects stochastic processes. Furthermore, machine learning models are beneficial or even necessary when there are dynamic data sets and changing conditions. Each approach has specific advantages considering model fidelity, precision, ability to generalize or extend, and practicality. Finally, new perspectives and modeling challenges are described on the integration of optimization models and machine learning to select maintenance policies for these types of systems with dependent degrading processes.



Keynote Speaker



Prof. Gregory Levitin

NOGA - Israel Independent System Operator

Speech Title: Protecting Complex Systems from Disasters and Deliberate Attacks

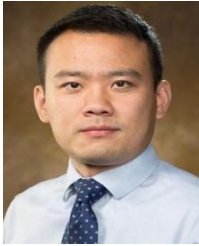
Time: 10:30-11:10, July 2 | Onsite Room: 2F·Auditorium

Biography: Gregory Levitin received his PhD degree in Industrial Automation from Moscow Research Institute of Metalworking Machines in 1989. From 1982 to 1990 he worked as software engineer and researcher in the field of industrial automation. From 1991 to 1993 he worked at the Technion (Israel Institute of Technology) as a postdoctoral fellow at the faculty of Industrial Engineering and Management. Prof. Levitin is presently a senior expert at the Reliability Department of NOGA - Israel Independent System Operator and distinguished visiting professor at Southwest Jiaotong University. His current interests are in system reliability. In this field Prof. Levitin has published more than 400 papers and five books. He served as a chair of the ESRA Technical Committee on System Reliability, as associate editor of IEEE Transactions on Reliability, area coordinator of International Journal of Performability Engineering. Now he serves as editor of Reliability Engineering & System Safety, and member of editorial boards of several other journals.

Abstract: The purpose of this talk is to introduce situations in which complex technical or organizational systems are involved in accidents, crises, wars, and terrorism. Phenomena related to reliability, risk, safety, security, and vulnerability will be considered. Models integrating risk analysis, reliability theory, and game theory will be presented. A system defense strategy combining partitioning, protection, decoy deployment, and preemptive strike will be explored, and the interrelationships between various defensive actions will be analyzed. A generalized model of damage caused to a complex multi-state series-parallel system resulting from a deliberate attack will be presented. The problem of limited resource allocation among various defense measures will be considered in optimal and minimax formulations. Illustrative examples will be provided.



Keynote Speaker



Prof. Xiao Liu

Georgia Institute of Technology

Speech Title: Statistical Learning and Sequential Designs for Reduced-Order Modeling of Parametric Systems

Time: 11:10-11:50, July 2 | **Onsite Room:** 2F Auditorium

Biography: Dr. Xiao Liu is the David M. McKenney Family Associate Professor at the H. Milton Stewart School of Industrial and Systems Engineering, Georgia Institute of Technology (Georgia Tech). He is also an Associate Director of the Brook Byers Institute of Sustainable Systems (BBISS)---one of the eleven Interdisciplinary Research Institutes (IRIs) at Georgia Tech. Before joining Georgia Tech, he held the Research Staff Member position at the IBM Thomas J. Watson Research Center, New York and Singapore, and was the John L. Imhoff Endowed Chair and Assistant Professor at the Department of Industrial Engineering, University of Arkansas. Dr. Liu's research focuses on statistical methods and machine learning in engineering domain knowledge intensive environments. His work has appeared in Engineering, Applied Math and Statistics journals (e.g., JASA, Technometrics, JQT, SIAM Journal on Scientific Computing, AIAA Journals, IISE Transactions, IEEE Transactions, Annals of Applied Statistics, etc.), and has been recognized by various academic societies (e.g., 2025 Frank Wilcoxon Prize of Technometrics, Statistics in Physical Engineering Sciences (SPES) Award by the American Statistical Association (ASA), IBM Outstanding Technical Achievement Award, and best paper awards from multiple conferences including INFORMS and IISE). Dr. Liu's research has primarily been supported by the U.S. National Science Foundation, including the NSF CAREER award. Dr. Liu served as the President of the Data Analytics & Information Systems division of IISE, and the Program co-Chair for the 2025 IISE Annual Conference & Expo. He is currently on the Editorial Board and an Associate Editor of multiple journals, such as Technometrics, IISE Transactions, QREI and IJRQSE. Dr. Liu received his PhD degree from the Department of Industrial and Systems Engineering, National University of Singapore (NUS).

Abstract: Projection-based model reduction is an essential tool for constructing parametric Reduced-Order Models (ROM) (in design, control, uncertainty quantification, digital twins applications, etc.). Utilizing the snapshot data from solving full-order governing equations, the Proper Orthogonal Decomposition (POD) computes the optimal basis modes, and a ROM can be constructed in the low-dimensional vector subspace spanned by the POD basis. For parametric governing equations, a potential challenge arises when there is a need to update the POD basis to adapt ROM that accurately capture the variation of a system's behavior over its parameter space. In the first part of the talk, we propose a Projected Gaussian Process (pGP) and formulate the problem of adapting the POD basis as a supervised statistical learning problem, for which the goal is to learn a mapping from the parameter space to the Grassmann manifold that contains the optimal subspaces. As a statistical learning approach, the proposed pGP allows us to optimally estimate (or tune) the model parameters from data and quantify the statistical uncertainty associated with the prediction. Building on the proposed pGP, the second part of the talk presents a sequential design problem where snapshot data are sequentially generated (by sequentially choosing the parameter settings for solving the full-order equations) such that the uncertainty associated with the parameter-to-subspace map can be efficiently reduced. The proposed sequential designs are based on a manifold-variance acquisition that quantifies



posterior uncertainty in principal-angle metrics and is implemented through a sequential greedy algorithm with a smoothed optimization step over the parameter domain. Numerical examples are presented to demonstrate the application and performance of the proposed methods.



Best Student Paper Competition

Topic: System Reliability Modeling, Safety Analysis, and Life Prediction		
13:30-16:00, July 2 Venue: 2F·Lemongrass		
Chairs: Hao Lu, China University of Mining and Technology; Haiyan Xu, Institute of High Performance Computing (IHPC), Agency for Science, Technology and Research (A*STAR)		
Time	Paper ID	Paper Detail
13:30-13:55	S1004	<i>System Reliability Evaluation for Unmanned Combat Aerial Vehicle Flight Route Network under GPS Jamming and Battery Limit</i> Presenter: Hung-Ming Chen National Yang Ming Chiao Tung University Authors: Hung-Ming Chen, Yi-Kuei Lin
13:55-14:20	S1020	<i>A Software Reliability Model Incorporating a Decreasing Fault Detection Rate and a Time-Dependent Fault Content Function</i> Presenter: Onon-Ujin Otgonbayar Chosun University Authors: Kwang Yoon Song, Onon-Ujin Otgonbayar, Youn Su Kim, In Hong Chang
14:20-14:45	S2017	<i>CS2D-RUL: A Robust Imbalanced Learning-based Method for Aero-engine Degradation Trend Modeling and Remaining Useful Life Prediction</i> Presenter: Rongze Li Northwestern Polytechnical University Authors: Rongze Li, Haoxiang Zhao, Wei Wang, Zhiqiang Cai
14:45-15:10	S1053	<i>Lifetime Prediction of BGA Under Electromigration Degradation: An Integrated Uncertain Time Series and Multi-Sample Fusion Approach</i> Presenter: Peixuan Li Beihang University Authors: Peixuan Li, Yingxia Liu, Waichon Lio, Rui Kang
15:10-15:35	S2021	<i>Knowledge-output Discrepancy and Falsehood Suppression in Language Models</i> Presenter: Jifan Zhang Waseda University Authors: Jifan Zhang, Tengfei Shao, Ayako Yamagiwa, Masayuki Goto



15:35-16:00	S2014	<i>Simulation-Based Analysis of Accident-Related Behavior in Automated Driving Systems</i> Presenter: Tong Li Hiroshima University Authors: Tong Li, Junjun Zheng, Hiroyuki Okamura, Tadashi Dohi
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Best Paper Competition

13:30-15:35, July 2 Venue: 2F·Basil		
Chairs: Sarah Marshall, University of Auckland; Yincai Tang, East China Normal University		
Time	Paper ID	Paper Detail
13:30-13:55	S3004	<i>Optimal Replacement Policy for K-out-of-N Systems with Periodic Imperfect Inspections</i> Presenter: Xirui Zeng Zhejiang University Authors: Chunling Luo, Xirui Zeng, Qiuzhuang Sun
13:55-14:20	S2036	<i>Maximum Product of Spacings Estimation for NHPP-Based Software Reliability Models</i> Presenter: Jingchi Wu Hiroshima University Authors: Jingchi Wu, Tadashi Dohi, Junjun Zheng, Hiroyuki Okamura
14:20-14:45	S3003	<i>Synthetic Spectral Generation for Physical Fidelity and Imbalanced Degradation-Stage Classification</i> Presenter: Zihan Zhang National University of Singapore Authors: Zihan Zhang, Xun Xiao
14:45-15:10	S3005	<i>A Measurement-Error Random-Effect Wiener Degradation Model Based on Accelerated Failure Time</i> Presenter: Wenhui Wu Zhejiang University Authors: Wenhui Wu, Qingqing Zhai
15:10-15:35	S1011	<i>Maximum Likelihood Estimation in a Bivariate Wiener Degradation Model with Imperfect Maintenance Actions</i> Presenter: Olivier Gaudoin University of Grenoble Alpes Authors: Olivier Gaudoin, Lucia Bautista, Inma T. Castro, Christophe Béranger, Laurent Doyen



Special Session I

Topic: Data-Driven Approaches for Complex Industrial Systems		
13:30-15:00, July 2 Venue: 1F·Sesame		
Chair: Chia-Yu Hsu, National Tsing Hua University		
Time	Paper ID	Paper Detail
13:30-13:45	S1064	<i>Automated Essay Scoring with Stylistic Features and Ordinal Regression</i> Presenter: Ryuga Fuji Waseda University Authors: Ryuga Fuji, Minami Hotta, Sirui Sun, Yuta Sakai, Masayuki Goto
13:45-14:00	S1080-A	<i>Virtual Metrology for Overlay Prediction and Empirical Study in the Thin Film Transistor Manufacturing</i> Presenter: Chia-Yu Hsu National Tsing Hua University Authors: Chia-Yu Hsu, Shin-Ying Huang
14:00-14:15	S1065	<i>Interpretable Recommendation with Asymmetric Aspect Importance of Product Features for Low and High Ratings</i> Presenter: Kohei Yamashita Waseda University Authors: Kohei Yamashita, Yusei Karino, Tianxiang Yang, Tengfei Shao, Masayuki Goto
14:15-14:30	S2010-A	<i>AI-Driven Smart Sampling Method in Integrated Quality Management Framework in TFT-LCD Industry</i> Presenter: James C. Chen National Tsing Hua University Authors: Ming-Sung Shih, James C. Chen, Tzu-Li Chen
14:30-14:45	S1066	<i>Leveraging User Reviews for Long-tail Recommendation Accuracy</i> Presenter: Masumi Tamura Waseda University Authors: Masumi Tamura, Ayako Yamagiwa, Masayoshi Moteki, Takeshi Moriguchi, Masayuki Goto



14:45-15:00	S2032	<i>Gated-FiLM Network for RUL Prediction of Rail Wheel Sets Under Varying Conditions</i> Presenter: Zhangyue Lei Beihang University Authors: Zhangyue Lei, Han Wang, Xiaobing Ma, Yu Zhao
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Special Session I

Topic: Data-Driven Approaches for Complex Industrial Systems		
09:00-10:30, July 3 Venue: 2F·Lemongrass		
Chair: Kotomichi Matsuno, Rissho University		
Time	Paper ID	Paper Detail
09:00-09:15	S1014	<i>Beyond Fault Labels: An LSTM-Enhanced Graph2Sequence Framework for Generative Fault Diagnosis in Petrochemical Processes</i> Presenter: Yanfu Wang China University of Petroleum Authors: Jiang Wei, Yanfu Wang, Weikai Ma
09:15-09:30	S1030	<i>A Physics-Informed Transfer Learning Framework for Liquid Hydrogen Leakage Detection Using Scarce Experimental Data</i> Presenter: Shuyu Xiao Nanjing University of Aeronautics and Astronautics Authors: Shuyu Xiao, Ying Chen, Xufeng Zhao
09:30-09:45	S1026	<i>Design and Implementation of a Metadata-Driven Multimodal Gait Data Platform</i> Presenter: Yunju Lee National Tsing Hua University Authors: Hsin Chen, Yunju Lee
09:45-10:00	S1032	<i>Performance-driven Adaptive Active Learning for Aircraft Engine Remaining Useful Life Prediction</i> Presenter: Ying Chen Nanjing University of Aeronautics and Astronautics Authors: Ying Chen, Xufeng Zhao
10:00-10:15	S1022	<i>Regime-Aware Calibration for Reliable Predictive Maintenance Decisions</i> Presenter: Kotomichi Matsuno Rissho University Authors: Kuo-Yi Lin, Yu-He Hung, Kotomichi Matsuno, Yi-Hsin Lin, Ruriko Watanabe



10:15-10:30	S1037	<i>Predictive Maintenance Strategy Based on Conservative Remaining Useful Life Prediction</i> Presenter: Junjie Zhu Nanjing University of Aeronautics and Astronautics Authors: Junjie Zhu, Xufeng Zhao
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Special Session I

Topic: Data-Driven Approaches for Complex Industrial Systems		
10:45-12:15, July 3 Venue: 2F·Lemongrass		
Chair: Kotomichi Matsuno, Rissho University		
Time	Paper ID	Paper Detail
10:45-11:00	S1040	<i>An Analysis of the Relationship Between Acoustic Features and Music Emotion Prediction</i> Presenter: Yingming Wang Waseda University Authors: Yingming Wang, Masayoshi Moteki, Tenfei Shao, Masayuki Goto
11:00-11:15	S1043	<i>Interpretable Pairwise Comparison Model for Image Impression Evaluation</i> Presenter: Shunki Matsui Waseda University Authors: Shunki Matsui, Zixuan Tong, Haruki Nagami, Ayako Yamagiwa, Masayuki Goto
11:15-11:30	S1048	<i>Diverse Counterfactual Explanations with Causal Consistency</i> Presenter: Kanji Kunihiro Waseda University Authors: Kanji Kunihiro, Taishiro Takashi, Yuta Sakai, Masayuki Goto
11:30-11:45	S1050	<i>Multi-Label Distribution Estimation for Customer Complaints from Single-Labeled Data</i> Presenter: Masataka Suzuki Waseda University Authors: Masataka Suzuki, Tomoko Sasano, Ayako Yamagiwa, Kensuke Sato, Masayuki Goto
11:45-12:00	S1058	<i>A Study on Multivariate Time Series Forecasting using AutoTimes Considering Variable Information</i> Presenter: Aoto Izawa Waseda University Authors: Aoto Izawa, Haruya Suwa, Tianxiang Yang, Tengfei Shao, Masayuki Goto



12:00-12:15	S1063	<i>Analysis of ECRTM-Based Iterative Topic Refinement using Large Language Models on Product Descriptions</i> Presenter: Kei Takaba Waseda University Authors: Kei Takaba, Jiayi Wang, Tianxiang Yang, Tengfei Shao, Masayuki Goto
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Special Session II

Topic: Modeling and Applications for Stochastic and Data-driven Systems		
13:30-15:15, July 3 Venue: 2F·Lemongrass		
Zoom Link: https://us02web.zoom.us/j/88465401348 Zoom ID: 884 6540 1348		
Chairs: Dong-Yuh Yang, National Taipei University of Business; Chia Huang Wu, National Yang Ming Chiao Tung University		
Time	Paper ID	Paper Detail
13:30-13:45	S1012-A	<i>Modelling a Finite-capacity Production System with Customized Orders and Heterogeneous Workers</i> Presenter: Chia Huang Wu National Yang Ming Chiao Tung University Authors: Chia Huang Wu, Dong-Yuh Yang, Yu-Shan Yen
13:45-14:00	S1013	<i>Extended the Nonstationary Polya-Aeppli Process and Its Application in the Field of Maintenance Modelling</i> Presenter: Yu-Hung Chien National Taichung University of Science and Technology Authors: Yu-Hung Chien, Indy Yu, Dong-Yuh Yang
14:00-14:15	S1018-A	<i>Cost and Steady-State Analysis of a Queueing System with Threshold-based Replacement Policy for Battery Swapping Stations</i> Presenter: Dong-Yuh Yang National Taipei University of Business Authors: Dong-Yuh Yang, Chia-Huang Wu, Yin-Ying Dai
14:15-14:30	S2028-A	<i>Stochastic Networked Multi-Factory Flexible Job Shop Scheduling with Inter-Factory Operation Routing, Multi Resource Constraints, and Outsourcing Decisions</i> Presenter: Meng-Ju Lee National Tsing Hua University Authors: Meng-Ju Lee, Tzu-Li Chen
14:30-14:45	S1059-A	<i>A Partially Observable Markov Decision Process for Personalized ICD Replacement</i> Presenter: Hao Xu



		The University of Sydney Authors: Lanxin Zhao, Hao Xu, Qiuzhuang Sun
14:45-15:00	S3009	<i>Degradation Characteristics and Reliability Evaluation of Worm Gear Reducers Under Graded Variable Loads</i> Presenter: Mingsheng Zheng Harbin Engineering University Authors: Jingbo Gai, Mingsheng Zheng, Qi Deng, Yanshuai Yang, Yupeng Wang, Shiyuan Tian, Yangping Wei, Shunteng Li
15:00-15:15	S2008-A	<i>ESG-Aware Dynamic Portfolio Construction: A Mean-Conditional Value-at-Risk Approach</i> Presenter: Zehua Zhang Fuzhou University Author: Zehua Zhang



Special Session III

Topic: Frontiers in Process Performance Evaluation Using Statistical Techniques		
13:30-15:15, July 3 Venue: 2F·Coriander		
Chair: Shih-Wen Liu, National Chin-Yi University of Technology		
Time	Paper ID	Paper Detail
13:30-13:45	S1023-A	<i>Order Allocation Decisions for Supply Chain Carbon Reduction Under Asymmetric Information Sharing Agreements</i> Presenter: Netnapha Chamnisampan National Chin-Yi University of Technology Authors: Cheng-Han Wu, Netnapha Chamnisampan, Xin-Ren Chen
13:45-14:00	S1029-A	<i>A Practical AI Framework for Skin Cancer Classification with a MATLAB-Based Diagnostic System</i> Presenter: Yu-Chi Li National Tsing Hua University Authors: Yu-Chi Li, Chien-Wei Wu
14:00-14:15	S1033-A	<i>Application of the NSGA-II to Solve the Multi-objective Vehicle Routing Problem with Time Windows</i> Presenter: He-Yau Kang National Chin-Yi University of Technology Authors: He-Yau Kang, Amy H. I. Lee, Ya-Chen Chu
14:15-14:30	S1044-A	<i>A Comparative Study on Interval Estimation of Non-Normal Process Capability Indices under Gamma Distribution</i> Presenter: Yi-Ting Li National Tsing Hua University Authors: Yi-Ting Li, Chien-Wei Wu
14:30-14:45	S1027-A	<i>A Hybrid Cloud-Blockchain-Based Modeling Approach for Cybersecurity Risk Management in Competitive Platform</i> Presenter: Thi Ly Na Kim National Chin-Yi University of Technology Authors: Thi Ly Na Kim, Meng-Hua Li, Netnapha Chamnisampan



14:45-15:00	S1045-A	<i>Development of a Process Capability Index-Based Two-State Sampling System with the Resubmitted Sampling Plan as Reference</i> Presenter: Yung-Hsin Wei National Tsing Hua University Authors: Yung-Hsin Wei, Chien-Wei Wu
15:00-15:15	S1041-A	<i>A Dynamic Decision Threshold Design for Lot Determination</i> Presenter: Shih-Wen Liu National Chin-Yi University of Technology Authors: Chih-Hao Chiu, Faldio Maredian, Supatcha Pukkaman, Shih-Wen Liu



Special Session IV

Topic: Integrating Quality Design Methods and Strategic Management		
13:30-15:00, July 3 Venue: 1F·Sesame		
Chair: Zih-Huei Wang, National Central University		
Time	Paper ID	Paper Detail
13:30-13:45	S1042-A	<i>Fuzzy Selection Method for Production Contractor Based on Machining Quality</i> Presenter: Tsang-Chuan Chang National Taichung University of Science and Technology Authors: Tsang-Chuan Chang, Lu-Wen Liao
13:45-14:00	S1028-A	<i>Acceptance Sampling with Historical Lot Information under Process Loss</i> Presenter: Yi-Hsin Kang National Central University Authors: Yu-Chen Hsiao, Chin-Yu Chang, Yi-Hsin Kang, Yu-Hsien Li, Zih-Huei Wang
14:00-14:15	S1035-A	<i>A Comparative Analysis of Algorithms for Conditional Attributes Acceptance Sampling Plans</i> Presenter: Yin-Chen Chang Feng Chia University Authors: Yin-Chen Chang, Zih-Huei Wang
14:15-14:30	S1049-A	<i>Design and Analysis of Attribute Quick-Switching Sampling Systems with Flexible Reference Plan</i> Presenter: I-Tseng Kuo National Tsing Hua University Authors: I-Tseng Kuo, Chien-Wei Wu
14:30-14:45	S2001-A	<i>A Quality-by-Design Guided Two-Stage Attention-Based Model for Postoperative All-Cause Mortality Prediction After Coronary Artery Bypass Grafting</i> Presenter: Lu Jia Hong Tamkang University Authors: Yen-Chun Huang, Chia-Hsun Lin, Kuan-Yu Chen, Chen Yan Lin, Lu Jia Hong, Mingchih Chen



14:45-15:00	S1055-A	<i>A Study of Attribute Resubmitted Sampling Plans with Rectifying Inspection</i> Presenter: Susan Emilia Wijaya National Tsing Hua University Authors: Susan Emilia Wijaya, Chien-Wei Wu
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Special Session V

Topic: System Reliability for Industrial Applications: Modeling and Analytics		
13:30-15:00, July 2 Venue: 2F·Coriander		
Chair: Cheng-Fu Huang, Feng Chia University		
Time	Paper ID	Paper Detail
13:30-13:45	S2038	<i>Learning-Based Purchasing in Scenario-Driven Supply Chain Networks</i> Presenter: Chen-Yi Liu National Taipei University of Technology Authors: Chen-Yi Liu, Ping-Chen Chang
13:45-14:00	S2034-A	<i>Development of a High-Temperature Radiation-Hardened Accelerometer</i> Presenter: Zhaoxiang Jiang Nuclear Power Institute of China Authors: Zhaoxiang Jiang, Chengning Zhou, Caixue Liu, Li Weimin, Yiwen Jia, Yunfeng Sun, Bin Fu
14:00-14:15	S1017-A	<i>Inference in Stochastic Degradation Process Including Maintenance Effects under General Observation Scheme</i> Presenter: Laurent Doyen University of Grenoble Alpes Authors: Laurent Doyen, Lucia Bautista, Christophe Bérenguer, Tom Berger, Inma Castro, Vincent Chabridon, Oliver Gaudoin, Emmanuel Rémy
14:15-14:30	S1038-A	<i>Optimal Resilience-constrained Maintenance Policy for Systems under Extreme Event Shocks</i> Presenter: Ziyu Wang Tianjin University Author: Ziyu Wang
14:30-14:45	S1071	<i>Weighting Tabu Search for the Selective Maintenance Problem</i> Presenter: Taishin Nakamura Kansai University Authors: Taishin Nakamura, Tetsushi Yuge, Koji Shingyochi



14:45-15:00	S2041-A	<i>Fault-Tolerant Reduced-Order Pipeline Monitoring Using Sparse Sensing and Dynamic Mode Decomposition with control</i> Presenter: Dohun Lee Dong-A University Authors: Dohun Lee, Seong Min Kim, Jeik Kim, Bonchan Koo
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Special Session V

Topic: System Reliability for Industrial Applications: Modeling and Analytics		
13:30-15:00, July 3 Venue: 2F·Basil		
Chair: Ping-Chen Chang, National Taipei University of Technology		
Time	Paper ID	Paper Detail
13:30-13:45	S1003	<i>Reliability Evaluation of a Multi-state Submarine Cable Transmission Network under Time Constraints and Backup Mechanism</i> Presenter: Thi-Phuong Nguyen National Chin-Yi University of Technology Authors: Ying-Hao Lee, Yi-Kuei Lin, Thi-Phuong Nguyen
13:45-14:00	S1067	<i>Synthetic Warranty Data Generation using SWANN: An Empirical Evaluation</i> Presenter: Sarah Marshall University of Auckland Authors: Sarah Marshall, Richard Arnold, Stefanka Chukova, Yu Hayakawa
14:00-14:15	S1072	<i>A Rule-based Agent Framework for Routing in Stochastic-flow Networks</i> Presenter: Ping-Chen Chang National Taipei University of Technology Authors: Wen-Hui Kuo, Ping-Chen Chang
14:15-14:30	S1085-A	<i>Resilience Assessment of Multi-State Submarine Cable Systems Based on a Semi-Markov Process</i> Presenter: Chieh-Ting Ho Tunghai University Authors: Chieh-Ting Ho, Ding-Hsiang Huang, Cheng-Fu Huang
14:30-14:45	S2029-A	<i>Multi-Objective Health-Aware Joint Production and Maintenance Scheduling in Stochastic Distributed Heterogeneous Flexible Job Shops</i> Presenter: Tsan-Yao Liu National Tsing Hua University Authors: Tsan-Yao Liu, Tzu-Li Chen



14:45-15:00	S1086-A	<i>PPO-Based Dynamic Traffic Splitting for Multi-State Flow Network Reliability Optimization</i> Presenter: Po-Yu Shih Tunghai University Authors: Po-Yu Shih, Cheng-Fu Huang, Ding-Hsiang Huang
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Special Session VI

Topic: Intelligent Reliability Modeling, Prognostics, and Decision-Making for Complex Engineering Systems		
15:45-17:15, July 3 Venue: 2F·Lemongrass		
Chair: Kuo-Yi Lin, National Kaohsiung University of Science and Technology		
Time	Paper ID	Paper Detail
15:45-16:00	S1069-A	<i>An Efficient Adaptive Multi-fidelity Ensemble of Surrogates Method for Structural Reliability Analysis</i> Presenter: Yan Ma Nanjing University of Finance and Economics Authors: Yan Ma, Yu-Shuai Che
16:00-16:15	S1078	<i>HierGP: A Hierarchical Multi-Output Gaussian Process for Engineering Reliability Prediction</i> Presenter: Xu Zhang Huazhong University of Science & Technology Authors: Xu Zhang, Jiexiang Hu, Quan Lin
16:15-16:30	S2004-A	<i>Status Prognostics of Cutting Tools Under Heterogeneous Working Conditions: An LSTM-based Framework with Sparse Prior Information Caused by Multifaceted Uncertainty</i> Presenter: Zhenggeng Ye Zhengzhou University Authors: Zhenggeng Ye, Hui Yang, Zhiqiang Cai, Shubin Si
16:30-16:45	S1016-A	<i>A Physics-Informed Stochastic Model for Fatigue Crack Growth with Dynamic Parameter Updating</i> Presenter: Jiaoyang Ma Tianjin University Authors: Jiaoyang Ma, Shuguang He



16:45-17:00	S2009-A	<i>Optimal Sales Strategy for a Manufacturer Offering Extended Warranty: Bundle or not</i> Presenter: Xuan Zhu Shanghai Jiao Tong University Authors: Xuan Zhu, Xin Wang
17:00-17:15	S3011	<i>Refined Safety Factor Design for Thin-Walled Cylindrical Shells: A Cost-Constrained AVOA Approach</i> Presenter: Yanshuai Yang Harbin Engineering University Authors: Jingbo Gai, Yanshuai Yang, Qi Deng, Yupeng Wang, Shiyuan Tian, Yangping Wei, Shunteng Li



Special Session VII

Topic: Reliability Modeling and Maintenance Optimization for Stochastic Industrial Systems		
15:45-18:00, July 3 Venue: 2F·Coriander		
Chairs: Juan Yin, Guangdong University of Technology; Bei Wu, Northwestern Polytechnical University		
Time	Paper ID	Paper Detail
15:45-16:00	S2039-A	<i>A Unified Resilience Evaluation Framework for Markov-type Based Multi-state Systems</i> Presenter: Bei Wu Northwestern Polytechnical University Authors: Bei Wu, Meiyan Li
16:00-16:15	S1060-A	<i>Semantic-Guided Label-Free Multimodal Fault Diagnosis Bridging Time-Series and Textual Data with Language Models</i> Presenter: Xingchen Liu The Hong Kong Polytechnic University Authors: Yi Ding, C.K M. Lee, Xingchen Liu, Qiuzhuang Sun
16:15-16:30	S2026-A	<i>A Bayesian Multi-Stress Eyring-Weibull Framework for Maintenance Optimization</i> Presenter: Nur Faizatus Sa'Idah Bandung Institute of Technology Author: Nur Faizatus Sa'Idah
16:30-16:45	S2042-A	<i>Statistical Learning-Based Optimal First Inspection Scheduling for Newly Commissioned Systems under Parameter Uncertainty</i> Presenter: Jingyuan Shen Nanjing University of Science and Technology Author: Jingyuan Shen
16:45-17:00	S2005-A	<i>Design and Recovery Decisions for Resilient Charging and Battery Swapping Infrastructure under Hazard Risks</i> Presenter: Zelong Lin Fuzhou University Authors: Zelong Lin, Wei Xie



17:00-17:15	S2018	<i>Compound Hawkes Process as a Degradation Model</i> Presenter: Hui Yi University of Otago Authors: Hui Yi, Xun Xiao
17:15-17:30	S2040-A	<i>Optimal Dynamic Resource Allocation for Enhancing the Resilience of Multi-state Systems under Disruptions</i> Presenter: Meiyang Li Northwestern Polytechnical University Authors: Meiyang Li, Bei Wu
17:30-17:45	S2045-A	<i>Remaining Useful Life Prediction for Power Plant Asset Using Deep Learning</i> Presenter: Wahyu Agung Mahajana Institut Teknologi Sepuluh Nopember (ITS) Surabaya Authors: Wahyu Agung Mahajana, Nani Kurniati
17:45-18:00	S3014-A	<i>Condition-based Maintenance Optimization for Energy Storage Battery Modules Considering Passive Balancing Energy Loss</i> Presenter: Biao Lu Nanjing University of Aeronautics and Astronautics Authors: Dehao Zhou, Biao Lu, Zhen Chen



Special Session VIII

Topic: Modeling and Optimization for System Reliability		
09:00-10:30, July 3 Venue: 1F·Sesame		
Chair: Nakamura Taishin, Tokai University		
Time	Paper ID	Paper Detail
09:00-09:15	S1051	<i>Optimal Maintenance Policy for a Markovian Deteriorating System with Random Operating Environment under Incomplete Information</i> Presenter: Nobuyuki Tamura Hosei University Author: Nobuyuki Tamura
09:15-09:30	S1015-A	<i>Structural Properties of Inventory-Dependent Inspection and Maintenance Control under Random Lead Times: A Semi-Markov Decision Approach</i> Presenter: Yongchao Liu Tianjin University Authors: Yongchao Liu, Xiuejie Zhao, Shugaung He, Guanjin Wang
09:30-09:45	S1083-A	<i>Efficient Computation of Mean Time-to-failure and Signatures at All States of a System</i> Presenter: Guido Lagos Universidad Adolfo Ibanez Authors: Guido Lagos, Simon Avila, Gonzalo Contador
09:45-10:00	S1056	<i>Reliability Bounding and Updating for Multi-state Systems via Dynamic Credal Networks under Imperfect Observation</i> Presenter: Yi-Xuan Zheng University of Electronic Science and Technology of China Authors: Yi-Xuan Zheng, Yu Liu
10:00-10:15	S2022	<i>Reliability Calculations of Various Two-dimensional Network Redundant Systems</i> Presenter: Syouji Nakamura Kinjo Gakuin University Authors: Syouji Nakamura, Natsuhi Hirata, Kari Baba, Kazunori Iwata, Satoshi Mizutani



10:15-10:30	S1061	<i>Review of Bivariate Distributions Developed Based on Reliability Concepts and Models</i> Presenter: Min Ju Lee Ewha Womans University Authors: Min Ju Lee, Na Young Yoo, Ji Hwan Cha
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Special Session VIII

Topic: Modeling and Optimization for System Reliability		
10:45-12:15, July 3 Venue: 1F·Sesame		
Chair: Shuhei Ota, Kanagawa University		
Time	Paper ID	Paper Detail
10:45-11:00	S2027-A	<i>Multi-state SDP and Distribution of Multi-state Networks</i> Presenter: Tetsushi Yuge National Defense Academy Author: Tetsushi Yuge
11:00-11:15	S2030	<i>Fine-grained Kernel-based Approaches in Software Reliability Estimation</i> Presenter: Jiacheng Bai Hiroshima University Authors: Jiacheng Bai, Tadashi Dohi, Junjun Zheng, Hiroyuki Okamura
11:15-11:30	S2044	<i>Optimal Operation Policy for a System with Delay Refund</i> Presenter: Satoshi Mizutani Aichi Institute of Technology Authors: Satoshi Mizutani, Toshio Nakagawa
11:30-11:45	S2031	<i>A Semi-Parametric Self-Exciting Software Reliability Model with Time-Varying Base Intensity and Shallow Neural Kernel</i> Presenter: Nanxiang Qiu Hiroshima University Authors: Nanxiang Qiu, Tadashi Dohi, Junjun Zheng, Hiroyuki Okamura
11:45-12:00	S3008-A	<i>Copula-Based Optimal Allocation on Active Redundancies of Fail-Safe Systems with Dependent Components</i> Presenter: Jiandong Zhang Northwest Normal University Author: Jiandong Zhang
12:00-12:15	S2035	<i>On Adaptive Testing Policy Learning for Localizing Aging-Related Bugs</i> Presenter: Junjun Zheng Hiroshima University Authors: Junjun Zheng, Jingchi Wu, Hiroyuki Okamura, Tadashi Dohi



Special Session X

Topic: Frontiers in Dynamics Modelling and Reliability Assessment of Advanced Equipment		
09:00-10:30, July 3 Venue: 2F·Coriander		
Chair: Ying Zeng, University of Electronic Science and Technology of China		
Time	Paper ID	Paper Detail
09:00-09:15	S1073-A	<i>Multi-Task Deep Gaussian Process Surrogate for Engineering Structural Reliability Analysis</i> Presenter: Yuan Lu University of Electronic Science and Technology of China Authors: Yuan Lu, Zhe Deng, Dong Sun, Yan-Feng Li, Hong-Zhong Huang
09:15-09:30	S1074-A	<i>A Hierarchical Bayesian Updating Approach for Multi-Fidelity Active Learning Reliability Analysis with One-Step Lookahead Fidelity Selection</i> Presenter: Zhi-Jia Zhang University of Electronic Science and Technology of China Authors: Zhi-Jia Zhang, Zhe Deng, Xian Zhang, Yan-Feng Li, Hong-Zhong Huang
09:30-09:45	S1075-A	<i>A Trajectory-Aware Health Indicator Construction Framework Based on Multi-Scale Information Fusion</i> Presenter: Guang Ren University of Electronic Science and Technology of China Authors: Guang Ren, Jing Li, Ying Zeng, Dong Sun, Hong-Zhong Huang
09:45-10:00	S1076-A	<i>Multidisciplinary Robust Design Optimization of Hundred-Meter-Level Boom System Based on CO-MVA</i> Presenter: Zhe Deng University of Electronic Science and Technology of China Authors: Zhe Deng, Zhi-Jia Zhang, Lijuan Li, Yuan Lu, Hong-Zhong Huang
10:00-10:15	S1077-A	<i>Temperature Estimation for IGBT Modules in Servo Drives Based on a Compact Thermal Network Considering Thermal Coupling</i> Presenter: Jing Li University of Electronic Science and Technology of China Authors: Jing Li, Guang Ren, Xin-Liang Dai, Yuan Lu, Hong-Zhong Huang



10:15-10:30	S1079-A	<i>Physics-Guided Domain-Invariant Representation Learning for Transferable Battery State-of-Health Estimation across Diverse Chemistries</i> Presenter: Chengrui Deng University of Electronic Science and Technology of China Authors: Chengrui Deng, Guang Ren, Zixing Huang, Yvxing He, Zhongwei Deng
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Special Session X

Topic: Frontiers in Dynamics Modelling and Reliability Assessment of Advanced Equipment		
10:45-12:30, July 3 Venue: 2F·Coriander		
Chair: Hua-Ming Qian, University of Electronic Science and Technology of China		
Time	Paper ID	Paper Detail
10:45-11:00	S1047-A	<i>A Study on the Conceptual Design of Data-Driven Integrated Platform for Railway System Safety Assessment and Prediction</i> Presenter: Jongwoon Kim Nemosys Co., Ltd. Authors: Jongwoon Kim, Kyungeun Kim, Jungyun Kwon, Alfonsus Julanto Endharta
11:00-11:15	S1082	<i>A Digital Design Method for Electronic Component Reliability Based on Multi-Physics Coupling Simulation</i> Presenter: Ying Zeng University of Electronic Science and Technology of China Authors: Ying Zeng, Hong-Zhong Huang
11:15-11:30	S2011-A	<i>Make or Buy? Strategic Sourcing and Business Model Selection in EV Supply Chains under Battery Degradation</i> Presenter: Xudong Mei Fuzhou University Author: Xudong Mei
11:30-11:45	S1084-A	<i>Resilience Assessment of Multi-State Submarine Cable Systems Based on a Semi-Markov Process</i> Presenter: Hua-Ming Qian University of Electronic Science and Technology of China Authors: Hua-Ming Qian, Feng Gao, Hong-Zhong Huang
11:45-12:00	S2024-A	<i>Early-Life Battery RUL Prediction Using Feature-Based Linear Mixed Models</i> Presenter: Zhanzhongyu Gao UNSW Canberra Authors: Zhanzhongyu Gao, Xun Xiao, Huadong Mo



12:00-12:15	S3010	<i>Tensile Fatigue Life Prediction for Special Wire Ropes Based on the Field Intensity Approach</i> Presenter: Yupeng Wang Harbin Engineering University Authors: Qi Deng, Yupeng Wang, Jingbo Gai, Mingsheng Zheng, Yanshuai Yang, Shiyuan Tian
12:15-12:30	S1036	<i>Design and Evaluation for Small-sample Exponential Accelerated Life Testing</i> Presenter: Jianchao Guo Beihang University Authors: Jianchao Guo, Huimin Fu



Special Session XI

Topic: AI-Enabled Reliability, Maintainability, and Safety Engineering		
15:45-17:45, July 3 Venue: 1F·Sesame		
Chair: Tieling Zhang, University of Wollongong		
Time	Paper ID	Paper Detail
15:45-16:00	S2019-A	<i>Investigating Sensor Data Feasibility for Robust Maritime Predictive Maintenance: A Task-Oriented Quality Assessment Approach</i> Presenter: Di Cui Institute of High Performance Computing (IHPC), Agency for Science, Technology and Research (A*STAR) Authors: Di Cui, Haiyan Xu, Xiuju Fu
16:00-16:15	S1019	<i>GMCSNet: Multi-Channel Compressive Sensing for Edge Vibration Monitorings</i> Presenter: Hao Dong Huazhong University of Science & Technology Authors: Hao Dong, Xufeng Huang, Jiexiang Hu
16:15-16:30	S3007-A	<i>Monotonicity-Constrained Support Vector Regression with Linear Kernel: Dual and Primal Formulations with Solver Comparison</i> Presenter: Hsuan-Ching Chen National Cheng Kung University Authors: Hsuan-Ching Chen, Ya-Yuan Hsu, Jen-Yen Lin
16:30-16:45	S1021	<i>FMEA-Based Knowledge-Graph-Enhanced RAG for Satellite Fault Diagnosis</i> Presenter: Xinhan Li Huazhong University of Science and Technology Authors: Xinhan Li, Shuyang Luo, Qi Zhou
16:45-17:00	S2020-A	<i>An Automated "Zero-Touch" Digital Testing Framework for Maritime Predictive Maintenance AI Models</i> Presenter: Haiyan Xu Institute of High Performance Computing (IHPC), Agency for Science, Technology and Research (A*STAR) Authors: Haiyan Xu, Xiuju Fu, Di Cui, Putu Hangga, Jiexiang Cai



17:00-17:15	S1024	<i>Hasher-Guided Multifidelity Strain Field Reconstruction for Wing Reliability Assessment</i> Presenter: Rongxi Zhang Huazhong University of Science and Technology Authors: Rongxi Zhang, Quan Lin, Tingli Xie
17:15-17:30	S3012-A	<i>Optimization Models for Integrated Vehicle Routing and Task Scheduling in a Hybrid Edge–Central Computing System</i> Presenter: Yu-Syuan Hong National Cheng Kung University Authors: Yu-Syuan Hong, I-Lin Wang
17:30-17:45	S2046-A	<i>Text Mining Approach to Managing Maintenance Databases of Power Plant Generator Systems</i> Presenter: Nani Kurniati Institut Teknologi Sepuluh Nopember (ITS) Surabaya Authors: Nani Kurniati, Muhammad Iqbal



Oral Session

Topic: Efficient Statistical Algorithms for Reliability Models and Software Reliability Testing		
15:45-17:30, July 3 Venue: 2F·Basil		
Zoom Link: https://us02web.zoom.us/j/88465401348 Zoom ID: 884 6540 1348		
Chair: Yincai Tang, East China Normal University		
Time	Paper ID	Paper Detail
15:45-16:00	S2002-A	<i>Planning Dual-Stress Accelerated Degradation Tests</i> Presenter: Guanqi Fang Zhejiang Gongshang University Authors: Guanqi Fang, Xi He, Yizi Wang, Rong Pan
16:00-16:15	S2043	<i>A Comprehensive Comparison of Lifetime Distributions Based on Goodness-of-Fit Analysis</i> Presenter: Koki Nakayama Hiroshima University Authors: Koki Nakayama, Hiroyuki Okamura, Jingchi Wu, Tadashi Dohi
16:15-16:30	S2003-A	<i>Variable Selection for Time-to-Event Data with Time-Varying Covariates under Cumulative Exposure Models</i> Presenter: Yueyao Wang Zhejiang Gongshang University Authors: Yueyao Wang, Jiayi Lian, Yili Hong, Xinwei Deng
16:30-16:45	S1025	<i>An Effectiveness Analysis of TimeGAN-based Data Augmentation for Transformer-based Software Reliability Prediction</i> Presenter: Seiya Nagai Tokyo Metropolitan University Authors: Seiya Nagai, Xiao Xiao 
16:45-17:00	S3001-A	<i>Exploring Strategy for Stochastic Maximum Flow Network Interdiction Problem</i> Presenter: Natsumi Takahashi National Defense Academy Authors: Natsumi Takahashi, Tetsushi Yuge



17:00-17:15	S1031	<i>Permutation-based Interval Estimation for Software Reliability</i> Presenter: Shunta Yamamoto Tokyo Metropolitan University Authors: Shunta Yamamoto, Xiao Xiao
17:15-17:30	S1062	<i>Statistical Monitoring of Censored Lifetime Data: Insights into Competing and Predetermined Alarms</i> Presenter: Xun Xiao University of Otago Authors: Chenglong Li, Xun Xiao, Piao Chen



Poster Session

Topic: Component and Product Reliability Verification and Fault Diagnosis		
15:15-15:45, July 3 Venue: 2F·Clove		
Chair: To-Cheng Wang, Republic of China Air Force Academy		
Number	Paper ID	Paper Detail
01	S1005-A	<i>Development of a Cloud-Based Decision Support System for Verifying Product Reliability</i> Presenter: To-Cheng Wang Republic of China Air Force Academy Authors: To-Cheng Wang, Chien-Wei Wu, Jun-Yu Zhang, Ruo-Yu Wang
02	S1057	<i>Corrosion Damage Monitoring in Bolted Lap Joints Based on Lamb Wave Energy Propagation and Probability Imaging</i> Presenter: Zhaofeng Dou Beihang University Authors: Zhaofeng Dou, Yunmeng Ran, Weifang Zhang
03	S2037	<i>Reliability Sensitivity Estimation of Mechanical Parts with Multiple Failure Modes Based on Saddlepoint Approximation</i> Presenter: Hao Lu China University of Mining and Technology Authors: Hao Lu, Wenqing Yang
04	S2023	<i>A Fault Diagnostic Method Based on Semantic-Inspired Data Generation under Zero-Sample Conditions</i> Presenter: Zihang Wang Beihang University Authors: Zihang Wang, Huiyun Zhang, Diyin Tang
05	S3013-A	<i>Design and Implementation of a Platform for Identifying Birds Commonly Involved in Cases</i> Presenter: Mingyue Qiu Nanjing Police University Authors: Mingyue Qiu, Qinghui Zhu, Xinmeng Wang



Campus Visit

July 2, 2026 (Thursday at 16:10)

❖ Location

National University of Singapore (NUS) & University Town (UTown)

❖ Itinerary

16:10 Gather at the gate of **Shaw Foundation Alumni House**.

16:20 Staff lead the tour of National University of Singapore (NUS) & University Town (UTown)

- ❖ The National University of Singapore (NUS) is Singapore's flagship university and one of the leading institutions of higher education in Asia and the world. Renowned for its excellence in research, innovation, and education, NUS consistently ranks among the top universities globally and has made significant contributions across a wide range of disciplines, including engineering, computer science, artificial intelligence, and business.

As part of the conference program, participants are invited to join a guided campus tour of NUS and its iconic University Town (UTown). UTown is a vibrant academic and residential hub designed to foster interdisciplinary learning, innovation, entrepreneurship, and global engagement. Featuring state-of-the-art learning facilities, collaborative workspaces, student residences, and green open spaces, UTown represents NUS's vision of a modern and connected university community.

This visit will provide participants with an opportunity to experience the unique academic atmosphere of NUS, explore its world-class campus environment, and gain insights into the university's approach to education, research, and innovation.

We warmly welcome you to join this tour and discover one of Asia's most prestigious and dynamic university campuses.

❖ Note

If you are interested in visiting the campus, please feel free to contact the secretary Ms. Anna by Wechat (19980544751) or email (aparm26@163.com) before **June 23**.



Singapore Attractions

Located at Asia's transportation and trade hub, Singapore is a vibrant international city-state. With its open economy, multicultural background, and world-class infrastructure, Singapore has developed into a leading global center for innovation, research, and international exchange. Despite its small size, Singapore possesses a unique charm that blends modern urban life with traditional culture. It boasts a modern skyline and top universities and research institutions, while also preserving a rich multicultural tradition. From Chinatown and Little India to Kampong Glam, different cultures converge and blend, creating a distinctive urban landscape. Singapore is renowned for its safety, cleanliness, and efficiency. Its well-developed transportation system and international service environment make it an ideal destination for international conferences and academic exchanges. Meanwhile, this "Garden City" offers beautiful cityscapes, iconic architecture, and a diverse culinary culture, providing a superb platform for scholars and professionals from around the world to inspire, exchange ideas, and deepen collaborations. There are many attractions worth visiting here.

Gardens by the Bay



A sci-fi spectacle that pushes the "garden city" concept to its extreme. It consists of a giant "flower dome" cryogenic chamber, a "cloud forest" with an indoor waterfall, and 18 towering "supertrees."

Merlion Park



This is the symbol of Singapore. The most classic photo spot, a must-do, is taking a creative photo of yourself "catching water" (using a camera angle). It's said that catching the water spouted by the



Merlion represents catching "wealth."

Sentosa Island



Sentosa Island is Singapore's ultimate holiday paradise. It boasts the island's top entertainment facilities.

- ✧ Universal Studios Singapore: The only Universal Studios in Southeast Asia. Although small, it's packed with attractions. Must-rides include "Transformers" and the dual-track roller coaster.
- ✧ S.E.A. Aquarium: One of the world's largest aquariums, it boasts enormous viewing windows, making watching schools of fish in storms incredibly therapeutic.
- ✧ Luge: If you can only choose one attraction, I highly recommend this one! First, you ride a chairlift up the mountain, then you drive a gravity-powered luge down the track. Adults and children alike will have a great time.

Chinatown



Chinatown: Singapore's Chinatown. It retains traces of the lives of early Chinese immigrants. You can visit the Buddha Tooth Relic Temple, eat at Maxwell Food Centre for the Michelin-starred "Tian Tian Hainanese Chicken Rice," and experience the rich, vibrant atmosphere of Southeast Asia.



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