Digital Twins with Artificial Intelligence

DigiTwin 2026

The 6th Digital Twin International Conference

PROGRAMME

4 - 8 August, 2026

University of Oxford • UK

Welcome

Dear distinguished guests, colleagues, and friends,

On behalf of the Digital Twin International Advisory Committee and the Organising Committee, it is our great honor and pleasure to welcome you to the **6th Digital Twin International Conference (DigiTwin 2026)**.

Digital twin technology continues to evolve as a foundational pillar of next-generation engineering, intelligent systems, and sustainable development. By bridging physical assets with high-fidelity digital representations, digital twins are enabling unprecedented advances in smart manufacturing, energy systems, aerospace, healthcare, infrastructure resilience, and urban intelligence. As the global demand for data-driven optimization and system-level integration intensifies, digital twin methodologies are becoming central to scientific innovation and industrial transformation.

DigiTwin 2026 serves as an international platform for researchers, engineers, industry leaders, and policymakers to exchange frontier knowledge, share emerging applications, and explore interdisciplinary collaborations. This year's programme highlights advances in modelling fidelity, real-time synchronization, AI-enabled digital twins, lifecycle management, and cross-domain integration. Through keynote speeches, technical sessions, and strategic dialogues, we aim to deepen both theoretical foundations and practical deployment pathways.

Since its inception in 2021, the DigiTwin conference series has steadily expanded its global influence, fostering an international community dedicated to advancing digital twin science and technology. Building upon the success of previous editions across Asia, Europe, and Oceania, DigiTwin 2026 continues this mission by strengthening global partnerships and encouraging multidisciplinary convergence.

We extend our sincere appreciation to the members of the advisory and programme committees, session chairs, keynote speakers, and organising teams whose dedication has shaped the high-quality scientific program of this year's conference. We are equally grateful to our academic partners, publishing collaborators, and industry sponsors for their continued support in promoting international cooperation and technological advancement.

We look forward to your active participation in DigiTwin 2026. May this conference inspire meaningful dialogue, innovative thinking, and lasting collaboration within the global digital twin community.

Alfonso Bueno-Orovio **Fei Tao**

General Chairs of DigiTwin 2026 conference

Organising Committee

ORGANISER

- University of Oxford
- Digital Twin (Journal)
- Digital Engineering (Journal)
- Taylor & Francis Group
- Elsevier

CO-ORGANISER

- Digital Twin International Research Center, Beihang University
- Beijing Key Laboratory of Digital Twin Manufacturing and Industrial Intelligence
- BZS (Beijing) Technology Development Co., LTD
- SAIC-GM-Wuling Automobile

INTERNATIONAL ADVISORY COMMITTEE & SCIENTIFIC COMMITTEE

The conference is organised under the strategic guidance of the Digital Twin International Advisory Committee (DTIAC). The Committee consists of 97 experts from 20 countries, including 14 academicians from 8 countries across various disciplines and one Nobel Prize laureate.
https://www.tandfonline.com/journals/tdtw20/about-this-journal#editorial-board

HONORARY CHAIRS

Andrew Y C Nee
National University of Singapore
Alain Bernard
École Centrale de Nantes
Qinping Zhao
Beihang University

CONFERENCE CHAIRS

Alfonso Bueno-Orovio
University of Oxford
Fei Tao
Beihang University

CONFERENCE VICE-CHAIRS

Tianliang Hu
Shandong University
Zehua Cheng
University of Oxford

CONFERENCE SECRETARIES

Li Yi, Beihang University
James Coleman, University of Oxford
Lena Liu, Beihang University
Abdallah Hasaballa, University of Oxford
Zhiqiang Wang, De Vinci Higher Education
Kaiwen Jiang, Brunel University of London

INTERNATIONAL ORGANISATION CHAIRS

Stefan Pickl
University of the Bundeswehr Munich
Nabil Anwer
Paris-Sarclay University
Ang Liu
The University of New South Wales
Andrea Matta
Politecnico di Milano

AWARD CHAIRS

Andrew Y C Nee
National University of Singapore
Xiaojun Liu
Southeast University

PUBLICITY CHAIRS

Tingyu Liu
Southeast University
Feng Xiang
Wuhan University of Science and Technology

General Programme

4th August 2026 Tuesday	
14:00-17:00	Registration & Closed meeting

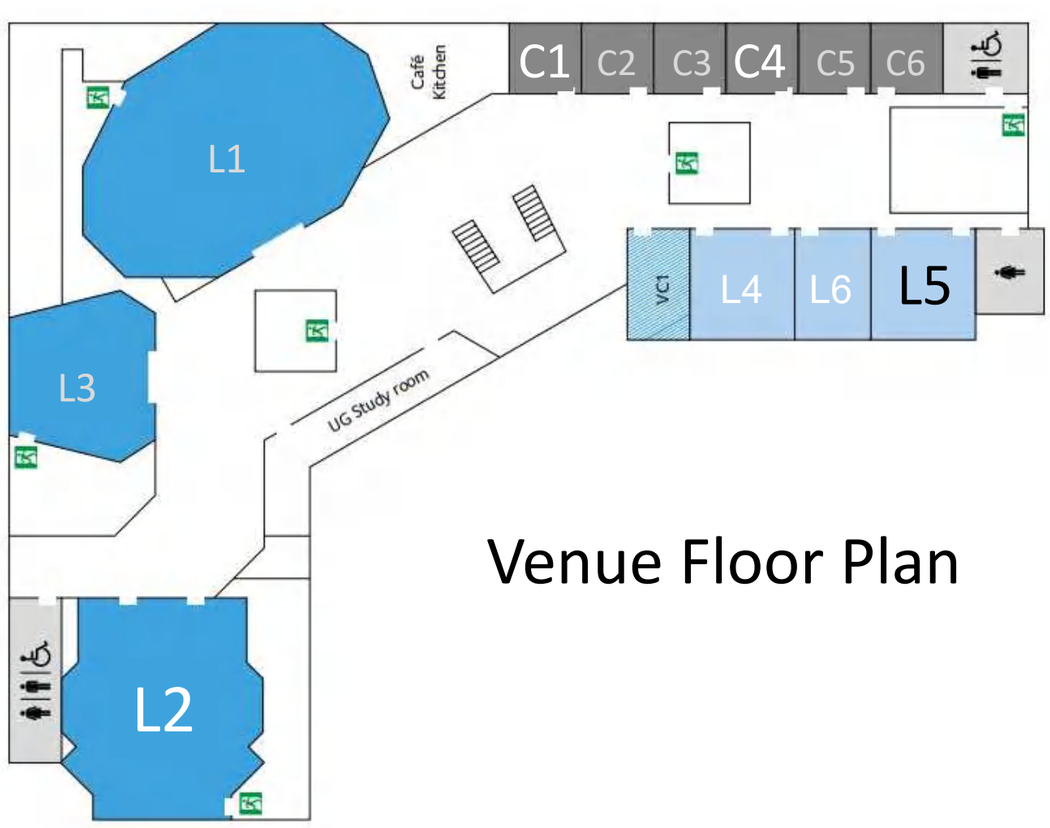
5th August 2026 Wednesday		
09:00-14:00	Registration & Free discussion	
14:00-14:30	L2	**Opening Ceremony**
14:30-15:15	L2	*Keynote 1:* **Prof. Duc Truong Pham** *(UK)*
15:15-16:00	L2	*Keynote 2:* **Prof. Fei Tao** *(China)*
16:00-16:30	L2	*Group Photo / Coffee Break*
16:30-17:15	L2	*Keynote 3:* **Prof. Jan C. Aurich** *(Germany)*
17:15-18:00	L2	*Keynote 4:* **Prof. Michael Grieves** *(US)*
18:00-19:30	**Welcome Dinner** - Andrew Wiles Building	

6th August 2026 Thursday				
09:00-09:45	*Keynote 5:* **Prof. Stefan W. Pickl** *(Germany)*			
09:45-10:30	*Keynote 6:* **Prof. John Erkoyuncu** *(UK)*			
10:30-10:50	*Coffee Break*			
10:50-12:30	**L2** Digital Twin Modelling and AI Technologies	**L5** Digital Twins for Sustainable and Green Manufacturing	**C1** Digital Twin Adoption and Value Realisation	**C4** Digital Experiment, Testing and Verification
12:30-13:30	*Lunch*			
13:30-15:10	**L2** Engineering of Digital Twins	**L5** Vertically Integrated Digital Twins for Manufacturing	**C1** Digital Twin Adoption and Value Realisation	**C4** Digital Experiment, Testing and Verification
15:10- 15:25	*Coffee Break*			
15:25-17:30	**L2** Engineering of Digital Twins	**L5** Digital Twins for Manufacturing and Machine Tools	**C1** Digital Twin Modelling and AI	**C4** Digital Twins for Energy Systems
18:30-21:15	**Conference Dinner** - Keble College			

General Programme

7th August 2026 Friday				
09:00-10:30	**L2** Engineering of Digital Twins	**L5** Digital Twin Frameworks and Standards	**C1** Digital Twins for Robotics and Autonomous Systems	**C4** Physics-Informed Digital Twins and Predictive Modelling
10:30-10:50	*Coffee Break*			
10:50-12:30	**L2** Digital Twins for Cities and Logistics	**L5** Digital Twins for Industrial Applications	**C1** Digital Twins for Smart Manufacturing	**C4** Physics-Informed Digital Twins and Predictive Modelling
12:30-13:30	*Lunch*			
13:30-15:10	**L2** Digital Twins for Healthcare and Medicine	**L5** Digital Twins for Smart Engineering Systems Ⅰ	**C1** Digital Twins for Smart Manufacturing	**C4** Digital Twins for Smart Engineering Systems Ⅱ
15:10-15:25	*Coffee Break*			
15:25-16:40	**L2** Digital Twins for Healthcare and Medicine	**L5** Digital Twins for Smart Engineering Systems Ⅰ	**C1** Digital Twins for Smart Manufacturing	**C4** Digital Twins for Smart Engineering Systems Ⅱ
16:40-17:00				
17:00-18:00	**L2**	**Awards and Closing Ceremony**		

8th August 2026 Saturday	
09:00-14:00	Closed Meeting / Social Event



Venue Floor Plan

OPENING CEREMONY

Wednesday, 5th August, 2026 Room - L2

Time	Agenda
14:00-14:05	**Welcome Address by DigiTwin2026 General Chair** Prof. Alfonso Bueno-Orovio
14:05-14:10	**Welcome Address by DigiTwin2026 General Chair** Prof. Fei Tao
14:10-14:15	**Address by Honoray Advisor of Digital Twin International Advisory Committee (DTIAC)** Prof. Duc-Truong Pham
14:15-14:20	**Address by Taylor & Francis - Publisher of *Digital Twin*** Mr. Richard Goodman, Taylor & Francis
14:20-14:25	**Address by Elsevier - Publisher of *Digital Engineering*** Dr. Monaz Mehta, Elsevier
14:25-14:30	**Special Event of makeTwin Industrial Digital Twin Software Platform** Prof. Fei Tao, Prof. Stefan W. Pickl, Prof. Duc-Truong Pham, Prof. Jan. C. Aurich, Prof. Alfonso Bueno-Orovio, etc.

AWARDS AND CLOSING CEREMONY

Friday, 7th August, 2026 Room - L2

Time	Agenda
17:00-17:15	**Introduction of IDEA & Announcement of 2026 IDEA Fellows** Prof. Li Yi
17:15-17:20	**Introduction of DigiTwin 2026 Award** Prof. Xiaojun Liu / Prof. Jan C. Aurich
17:20-17:55	**Announcement of DigiTwin 2026 Award Recipients** Prof. Alfonso Bueno-Orovio
17:55-18:00	**Acknowledgements & Introduction to DigiTwin 2027 (Spain)** Prof. Alfonso Bueno-Orovio

Thursday, 6th August 2026

Room L2

Time	Presentation List
10:50	**Enabling Fusion Digital Twins with a Multi-physics Platform for Fuel Cycle Technology** Helen Brooks | United Kingdom Atomic Energy Authority, UK
11:15	**Design for Excellence (DFX) in the AI Era: Perspective and Practice** Zhinan Zhang | Shanghai Jiao Tong University, China
11:40	**Building Visualizations of Fusion Digital Twins with OpenUSD and Omniverse** Rui Costa | United Kingdom Atomic Energy Authority, UK
12:05	**Large Language Model Assisted Simulation Model Generation for Performance Digital Twin of Discrete Production System** Junfeng Wang | Huazhong University of Science & Technology, China
12:30	*Lunch*
13:30	**Model-Driven Industrial Digital Twins and AI** Andreas Wortmann | University of Stuttgart, Germany
13:55	**Digital Twin Based Embodied Robot Control** Jun Xu | Xi'an Jiaotong University, China
14:20	**From Digital Masters to Cognitive Twins – An Assistive Ethical Decision Module for Autonomous Driving** Ghita Mezzour | Jaguar Land Rover, UK
14:45	**Digital Twin Driven Four-Way Pallet Shuttle Storage and Retrieval System Optimization** Ning Zhao | University of Science and Technology Beijing, China
15:10	*Coffee Break*
15:25	**Towards a Science of Digital Twin Engineering: The French EDT (Engineering Digital Twins) Programme** Guy De Spiegeleer | Inria, France
15:50	**Rapid Development Platform for Digital Twin Systems of CNC Equipment and Its Applications** Tianliang Hu | Shandong University, China
16:15	**Engineering Data-Driven Digital Twins: Project Delivery and Asset Lifecycles in Industrial and Built Environments** Jaroslaw Szczepanek | Fluor Corporation, Poland
16:40	**Key Technologies of Digital Twin Shop-floor: Practices for New Energy Vehicles Smart Manufacturing** Ying Cheng | Beihang University, China
17:05	**Considering Risk Analyses in Digital Twin Engineering** Stephen Creff | Institute of Research and Technology SystemX, France

Thursday, 6th August 2026

Room L5

Time	Presentation List
10:50	**CampusDT-GDL: A Digital Twin for Campus Sustainability — Optimal Energy Dispatch, Dynamic LCA, and Sim-Opt Validation** Jose Antonio Marmolejo | Universidad Panamericana Mexico, Mexico
11:15	**A DT-AI Hybrid Framework for Trustworthy Distributed Scheduling in Complex Energy Systems** Xing He | Shanghai Jiao Tong University, China
11:40	**Product Carbon Footprint Acquisition, Modeling, and Optimization in Low-Carbon Mechatronic Product Development** Liming Wang | Shandong University, China
12:05	**Digital Twin-Based Intelligent Operation and Maintenance for Green Manufacturing** Yuchen Liang | Jiangsu University, China
12:30	*Lunch*
13:30	**Process Mining System Discovery for Synchronous Digital Twins in Manufacturing** Erica Pastore | Politecnico di Torino, Italy
13:55	**Digital Twin-Based Information Modeling and Validation for Alumina Smart Plants** Xiaoling Zhang | Shenyang University of Technology, China
14:20	**Digital Twins for Sustainable Manufacturing: A Proposed Conceptual Framework** Ersilia Cozzolino | University of Naples Federico II, Italy
14:45	**A Data-Driven Digital Twin Framework for Smart Additive Manufacturing: Linking Process Parameters, Rheology, Mechanical Performance, and Structural Integrity** HamidReza Vanaei | De Vinci Research Center (DVRC), France
15:10	*Coffee Break*
15:25	**Multi-axis additive-subtractive hybrid manufacturing using digital twin model** Dong He | Southeast University, China
15:50	**Twinning Oldest and Newest Manufacturing Processes for the 21st Century - Metal Casting Meets Additive Manufacturing** Guha Manogharan | Pennsylvania State University, USA
16:15	**Digital Twin–Driven Thermal Error Control and Virtual Sensing for CNC Machine Tools** Hanbo Yang | Xi'an Jiaotong University, China
16:40	**From Digital Twin Research of Machine Tools to Implemented Business Value** Jan Mertes | :em engineering methods AG, Germany
17:05	**Uncertainty-Aware Digital Twin for Trustworthy Thermal Error Compensation in Precision Machine Tools** Jihui Han | The University of Tokyo, Japan

Thursday, 6th August 2026

Room C1

Time	Presentation List
10:50	**The Value of Digital Twins in the Pharmaceutical Industry** Christian Kober | ETH Zurich, Switzerland
11:15	**Discoverability of Digital Twins** Riku Ala-Laurinaho | Aalto University, Finland
11:40	**What Do You Do with a Digital Twin Once It Is Built? Connecting LLM Agents in a Production Logistics Lab** Yongkuk Jeong | KTH Royal Institute of Technology, Sweden
12:05	**Integrating MBSE and Digital Twins for Maritime Design and Compliance** Haitham Al-Shami | Aalto University, Finland
12:30	*Lunch*
13:30	**A4PS: Agentic AI-Assisted Advanced Planning and Scheduling with Large Language Models for Smart Manufacturing** Mingxing Li | Jinan University, China
13:55	**A Multi-View Architectural Framework for Digital Twins in the Railway Sector** Hibat Allah Babty | Université de Technologie de Compiègne (UTC), France
14:20	**AcKG-RAG: An LLM-Based Automatic Knowledge Graph Construction and Retrieval-Augmented Generation Approach for Maintenance** Wanshan Li | Jinan University, China
14:45	**Surrogate Modeling for Real-Time Stress Prediction of Top-Drive Main Shafts in Digital Twin Systems** Xingyu Ai | China University of Petroleum, China
15:10	*Coffee Break*
15:25	**A 5D Digital Twin Framework for Terrestrial Laser Scanners (TLS): Kinematic Misalignment Modelling and Calibration** Sonia Garcia | Université Paris-Saclay, France
15:50	**Bulk Stockpile Volume Measurement Based on Stage-wise Functional Decoupling for Point Cloud–Image Collaborative Fusion** WeiLong Niu | Jinan University, China
16:15	**Modeling the 5D Digital Twin Framework through Ontological Formalization** Bouthayna EL Bouzaidi Tiali | Institute of Research and Technology SystemX / LURPA, France
16:40	**Engineering a Generic Digital Metrological Twin: A Framework for the Uncertainty Assessment of Geometric Terrestrial Laser Scanning Measurements** Klara Grefe | Physikalisch-Technische Bundesanstalt (PTB), Germany
17:05	**Evolving Gaussian Fields for Digital Twins** Junyang Chen | The Hong Kong Polytechnic University, HK, China

Thursday, 6th August 2026

Room C4

Time	Presentation List
10:50	**Human-Factor-Aware Digital Twins for Intelligent Ship Operations: Applications in Maritime Safety and Ship–Shore Collaboration** Xiaolin Nie | Wuhan Technical University, China
11:15	**Dynamic Data-driven Test Verification of Intelligent Thermal Protection System** Yuzheng Han | Harbin Institute of Technology, China
11:40	**Digital Twin on Aircraft Assembly Systems: Online Perception and Collaborative Regulation of Geometrical and Mechanical Information** Chengyu Li | Nanjing University of Aeronautics and Astronautics, China
12:05	**Dynamic Data-Driven Real-Time Monitoring and Prediction of Thermal Protection Systems in Hypersonic Vehicles** Songhong Yu | Harbin Institute of Technology, China
12:30	*Lunch*
13:30	**Machine Learning and Actuator Placement Optimization for Digital Twins of Fuselage Assembly** Juan Du | The Hong Kong University of Science and Technology (Guangzhou), China
13:55	**Dynamic Data-Driven In-situ Residual Performance Prediction of 2D-C/SiC under High-Temperature Oxidation** Zhi Wang | Harbin Institute of Technology, China
14:20	**Intelligent Operation and Maintenance of Aircraft Structures Based on Digital Twins** Lei Huang | Dalian University of Technology, China
14:45	**Rapid Prediction of Residual Mechanical Properties of C/SiC Composites Based on Surrogate Model** Rong Lv | Harbin Institute of Technology, China
15:10	*Coffee Break*
15:25	**Key Technologies and Applications of Artificial Intelligence in Electrical Distribution Systems** Ji Qiao | China Electric Power Research Institute, China
15:50	**Framework Design and Application Prospect for Digital Twins System of Energy Internet** Sheng Chen | China Electric Power Research Institute, China
16:15	**AI-Driven Power System Operations and Electricity Market** Haiwang Zhong | Tsinghua University, China
16:40	**Digital Environmental Simulation Methodology** Kunlun Wei | China Electric Institute, China

Friday, 7th August 2026

Room L2

Time	Presentation List
09:00	**Digital Twins as the Backbone of Digital Continuity in Space Systems Engineering** Philipp Chrszon | German Aerospace Center (DLR), Germany
09:25	**Super Systems Digital Twin for Scenario-Based Smart PSS Design: Supporting Early-Stage Engineering Design and Decision Making across China and Europe Car Manufacturing Industry** Yan Zhang | University of Shanghai for Science and Technology, China
09:50	**GreyCat: A Programmable Temporal-Graph Platform for Digital Twins** Francois Fouquet | DataThings S.A., Luxembourg
10:15	**Digital Twin Method for High-Accuracy Structural Strength Assessment** Kuo Tian | Dalian University of Technology, China
10:40	*Coffee Break*
11:00	**Digital Twin-enabled Cooperative Autonomous Trucks in Smart Construction Logistics** Ray Y Zhong | The University of Hong Kong, HK, China
11:25	**Digital Twin for Inclusive Flood Disaster Response** Stephan Onggo | University of Southampton, UK
11:50	**From Services to Capabilities: Structuring Digital Twin Engineering through Evidence from Logistics and Supply Chain Management** Yu Liu | Mines Paris - PSL University, France
12:15	**Digital Twin-enabled Low-Carbon Transportation for Modular Integrated Construction in Hong Kong** Shuaiming Su | The University of Hong Kong, HK, China
12:40	*Lunch*
13:30	**Cardiac Digital Twins for Mechanistic ECG Interpretation** James A. Coleman | University of Oxford, UK
13:55	**Practical Application of Digital Twins in Aortic Endovascular Repair** Mingyao Luo, Xiangyu Li | Fuwai Hospital, China
14:20	**Digital Twins for KPI-Driven Hospital Operations: A Methods Engineering Translation Framework from Automotive Manufacturing to Healthcare** Hilâl Yılmaz | Independent Researcher, Turkey
14:45	**From Mechanisms to Digital Twins: Designing Brain Therapies through Multiscale Physics** Tian Yuan | Imperial College London, UK
15:10	**A Cardiac Digital Twin of Hypertrophic Cardiomyopathy: From Disease Progression to Precision Therapy** Abdallah Hasaballa | University of Oxford, UK
15:35	**Concurrent control of natural and robotic limbs through a tactile-encoded neural interface** Tianyu Jia | Imperial College London, UK
16:00	**Systems of Digital Twins: A Systematic Literature Review and a formal framework** Giulia Pellegrino | University of Salento, Italy
16:25	**Digital Twin Technology in Healthcare: From Predictive Modelling to Personalised Treatment and Rehabilitation** David Olawade | University of East London, UK

Friday, 7th August 2026

Room L5

Time	Presentation List
09:00	**XRTwin4Industry: Empowering Industrial Digital Twins with XR and Instruction System - A Framework for Standardization and Interoperability** Abdelhadi Belfadel | IRT SystemX, France
09:25	**When Digital Twins Travel: A Five-Level Taxonomy of Domain Gaps in Manufacturing Prediction** Patrick Ruediger-Flore | RPTU Kaiserslautern-Landau, Germany
09:50	**Exploration of Digital Twin Standard Framework** Xin Ma | Beihang University, China
10:15	**Dual Digital Twin for Early Development and Commissioning of Digital Triplets** Zakka Ugih Rizqi | Aalborg University, Denmark
10:40	*Coffee Break*
11:00	**Key Technologies and Applications of Intelligent Hull Plate Forming Driven by Digital Twins** Jinfeng Liu | Jiangsu University of Science and Technology, China
11:25	**Digital Twin Enabled Auto-Calibrated Real-Time Locating Service for Production Logistics Synchronization** Zhiheng Zhao | The Hong Kong Polytechnic University, HK, China
11:50	**Digital Twin for the Thermal Analysis of Constant Velocity Joints** Jon Garcia Urbieta | Dauch Corporation, Spain
12:15	**Investigation of the Complex-Structure Preform Equipment Management System and Yarn Tension Prediction Model** Jingwen Mo | Southeast University, China
12:40	*Lunch*
13:30	**Exploring Dexterous Robotic Hands: From Manipulation Tasks to Digital Twins** Kaiwen Jiang | Brunel University of London, UK
13:55	**Neural Operator Surrogates for Fast CFD Field Prediction in Biomass Boiler Digital Twins** Przemysław Motyl | Casimir Pulaski Radom University, Poland
14:20	**The Research of Centroidal Dynamic Planning for Quadruped Robot Locomotion Control** Yonggang Liu | Chongqing University, China
14:45	**Digital Twin Enabled Intelligent Structures: A Perspective** Qiang Yang | Harbin Institute of Technology, China
15:10	*Coffee Break*
15:25	**An Integrated Framework for the Design of Trustworthy Industrial Digital Twins** Achraf Kallel | Institute of Research and Technology SystemX, France
15:50	**Bioinspired Design of Flexible High-Precision Pressure/Strain Sensors Based on Biological Mechanosensory Systems** Changchao Zhang | University of Cambridge, UK
16:15	**Occupants-Centered Digital Twin Model for Enhancing Indoor Environmental Quality** Mohamed Marzouk | Cairo University, Egypt

Friday, 7th August 2026

Room C1

Time	Presentation List
09:00	**Digital Twin for Intelligent Excavators: Enhancing Autonomous Operation in Complex Environments** Zhiwen Ma | Guizhou University, China
09:25	**Digital Twin-Enabled Embodied Intelligence for Autonomous Operations in Petrochemical Facilities** Pengju Wang | Beihang University, China
09:50	**Welding Copilot: An LLM-Empowered Digital Twin for Human-Like Robotic Welding** Yuda Cao | The Hong Kong Polytechnic University, HK, China
10:15	**PetroTwin: Digital Twin Modeling and Virtual-to-Real Training Framework for Embodied Intelligence Explosion-Proof Robots in Petrochemical Facilities** Yang Meng | Beihang University, China
10:40	*Coffee Break*
11:00	**Generation Method of Generalized Remanufacturing Process Schemes Based on Retired Mechanical Product Genes** Yuyao Guo | Wuhan University of Science and Technology, China
11:25	**Digital Twin-driven Manufacturing of Diamond-Reinforced Metal Matrix Composites** Meng Ye | Tsinghua University, China
11:50	**Digital Twin-Driven Intelligent Shape Correction via Equivalent Deformation Transfer Coefficient: From Cold-Start to Mass Production** Chenhao Yang | Northeastern University, China
12:15	**Digital Twin-Enabled Intelligent Quality Control in Automotive Manufacturing** Xiangyu Ren | Wuhan University of Science and Technology, China
12:40	*Lunch*
13:30	**Digital twin-enabled end-to-end spatial-temporal traceability model for intralogistics operations** Bin Huang | The Hong Kong Polytechnic University, Hong Kong, China
13:55	**Architecting Digital Twins: Interoperability Challenges, Standardization, and Model-Driven Engineering Opportunities** Enxhi Ferko | Jotne Connect AS, Norway
14:20	**Research and Application of the Assembly Quality Test Method for Pilot Solenoid Valves Based on the Digital-Physical Fusion** Jiankang Zhang | Beihang University, China
14:45	**A Multimodal task for Resistance Spot Welding Mechanical Performance Prediction via Metallographic Segmentation and Multi-Task Learning** Zhongjie Yue | Xi'an Jiaotong-Liverpool University, China
15:10	*Coffee Break*
15:25	**Optimization of connection models in digital twin systems: Efficient merging and assembly strategy** Chongxin Wang | Southeast University, China
15:50	**Construction and Deployment of Digital Twins for Industrial X-ray/CT Inspection Systems** Zhiyu Gao | Beihang University, China

Friday, 7th August 2026

Room C4

Time	Presentation List
09:00	**Research on Reduced-Order Model of Heat Treatment Online Simulation for Digital Twin Application** Daming Tong | Shanghai Jiao Tong University, China
09:25	**Digital Twin for Full-Field Deformation Monitoring Under Dynamic Load** Tianhe Gao | Dalian University of Technology, China
09:50	**Routing-PIDON: Physics-Informed Operator Learning for Multiscale Multiphysics** Xingpu Feng | Xi'an Jiaotong-Liverpool University, China
10:15	**Digital Twin for Full-Field Temperature Reconstruction Based on Multi-Source Data Fusion** Zhiyong Sun | Dalian University of Technology, China
10:40	*Coffee Break*
11:00	**SAT-PINN: Spatial-Angle Tension Physics-Informed Neural Network for Carbon Fiber Yarn Monitoring** Xiaotian Zheng | Southeast University, China
11:25	**A Multi-Twin Collaborative System for Human-Machine Collaborative Manufacturing** Jingkai Li | Shandong University, China
11:50	**Digital-Twin Driven Thermo-Mechanical Coupled Modeling for Temperature-Prediction in Reheating Furnaces** Lichang Liu | Wuhan University of Science and Technology, China
12:15	**Configurable Modeling and Simulation Method and Software for Digital Twin Production Logistics Based on makeTwin** Mingyang Gao | Beihang University, China
12:40	*Lunch*
13:30	**Digital Twin-Assisted Optimization of Nonlinear Pulse Amplification via FROG-Based Feedback** Jikun Yan | University of Southampton, UK
13:55	**Digital twin-enabled position error compensation for cable-driven parallel robots via PatchTST-enhanced prediction** Jin Shi | Southeast University, China
14:20	**Dual-Stage CBF-QP-Guided Diffusion Policy for Transit Motion Planning in Robotic Welding** Changjin Yan | The Hong Kong Polytechnic University, Hong Kong, China
14:45	**A Digital Twin-Oriented State Mapping Method for Metal-Sealed Flange Connections in Well-Control Equipment** Zeyi Shang | China University of Petroleum-Beijing, China
15:10	*Coffee Break*
15:25	**Digital Twin-Based Carbon Footprint Modeling and Traceability Analysis for Complex Products** Xingyuan Xiao | Shandong University, China
15:50	**Online Monitoring of Sealing Performance of BOP Flange Connection Structures Based on Digital Twins** DongYang Huang | China University of Petroleum-Beijing, China
16:15	**Mechanism-driven Digital Twin for real-time force prediction in Incremental Sheet Forming** Feixiang Wang | Southeast University, China

KEYNOTE 1

Prof. Duc-Truong Pham

University of Birmingham

Fellow of the Royal Academy of Engineering

Honoary Advisor of Digital Twin (Journal)

Biography

Prof. Duc-Truong Pham is the Chance Professor of Engineering at the University of Birmingham. He has published over 700 papers and books on intelligent systems and advanced manufacturing and remanufacturing, and has graduated more than 100 PhD students. His awards include five prizes from the Institution of Mechanical Engineers, a Lifetime Achievement Award from the World Automation Congress and a Distinguished International Academic Contribution Award from the IEEE. He is a Fellow of the Royal Academy of Engineering, Learned Society of Wales, SME, IET and IMechE.

Title: A Stepping Stone to Digital Remanufacturing

Abstract

Remanufacturing plays a vital role in the circular economy, yet the disassembly stage remains labour-intensive and technically demanding due to the uncertain, variable condition of returned products. Over the past ten years, the Autonomous Remanufacturing Laboratory at the University of Birmingham has undertaken a focused research programme to understand these challenges and develop robotic systems capable of performing disassembly tasks autonomously or in collaboration with human operators. This presentation highlights advances in the application of digital engineering tools that help machines overcome the issues posed by uncertainty and perform operations previously dependent on skilled human judgment. Following an introduction to remanufacturing—its challenges and its benefits—the presentation will describe work undertaken on the use of digital technologies to facilitate robotic disassembly. These include visual and force sensing, machine learning, intelligent optimisation, collaborative robots and digital twins, which together provide the essential foundations for building a stepping stone to smart digital remanufacturing.

KEYNOTE 2

Prof. Fei Tao

Beihang University

Editor-in-Chief of Digital Twin

Editor-in-Chief of Digital Engineering

Biography

Dr. Fei Tao is a Professor at the Beihang University. His research focuses on smart manufacturing and digital twins. He has served as PI for over 30 national research and industry projects. He has published seven books and over 100 peer-reviewed journal articles as the first/corresponding author in Nature, CIRP Annals, and IEEE/ASME Transactions, with over 30 of them being ESI highly cited papers. His publications have over 50,000 citations. He was elected as the Global Highly Cited Researcher (2019-2025) and one of the 20 Most Influential Academics in Smart Manufacturing by SME in 2021. He is the founding Editor-in-Chief of *Digital Twin* in Taylor & Francis Group and *Digital Engineering* in Elsevier; and he also founded the Digital Twin Global Forum and the Digital Twin International Conferences (DigiTwin).

Title: Five-Dimensional Digital Twin Model:From Theory to makeTwin Industrial software and Applications

Abstract

Digital twin has gained significant attention from both academia and industry over the past few years. To further broaden the applications of digital twin, this talk will introduce a series of related works we have conducted. First, the five-dimensional digital twin model is presented, encapsulating five key dimensions: physical entity, digital twin model, digital twin data, service, and their connections. Second, based on this model, a series of theoretical methods (including theories of digital twin modelling, digital twin data, digital twin connection and interaction), along with enabling technologies, essential tools, and standard systems for digital twin, is discussed. Third, two international journals (Digital Twin and Digital Engineering) and one international conference (Digital Twin International Conference) have been initiated to promote global collaboration in this field. Moreover, a digital twin software platform, named makeTwin, has been developed to address the lack of related software and platforms for practical applications. Finally, several industrial applications enabled by makeTwin will be briefly presented, particularly in smart manufacturing, aerospace, textile logistics, city management, and other sectors.

KEYNOTE 3

Prof. Jan C. Aurich

RPTU Kaiserslautern-Landau

acatech Fellow

Editorial Board Member of Digital Engineering

Biography

Prof. Jan C. Aurich received his Ph.D. degree from Leibniz University Hannover in 1995. From 1990 to 1995, he was a research assistant at the Institute for Production Engineering and Machine Tools, Leibniz University of Hanover, and led the "CAD/CAPP" team from 1993. From 1995 to 2002, he played a management role in both production and development departments at Daimler AG. In 2002, he became the chair professor of the Institute for Manufacturing Technology and Production Systems at TU Kaiserslautern. In 2013-2014, he was a Fulbright Visiting Professor at UC Davis, USA. Prof. Aurich is a member of the German National Academy of Science and Engineering (acatech) and the German Academic Association for Production Technology (WGP), and a fellow of the International Academy for Production Engineering (CIRP). His research interests include micro-manufacturing, product-service systems, sustainable manufacturing, and digital production.

Title: From Theory to the Shop Floor: Framework for Digital Twins in Manufacturing

Abstract

The concept of digital twins (DTs) revolutionizes modern manufacturing by enhancing the physical system with a digital system. However, a lack of consensus and uniform agreement on the definition of DT prevents the utilization of its full potential.

In a first step, various definitions of DTs, the different areas of application in manufacturing systems (factory, process, machine level), and different purposes (diagnosis, monitoring and control, prediction) are outlined. The benefits and challenges of DTs and the implementation in manufacturing systems are identified.

Afterwards, a review of current research regarding implemented applications of DTs in manufacturing scenarios is presented, resulting in an overview of recent advancements. Based on that, implications for future research directions are highlighted.

Finally, the paper proposes a novel framework designed for DTs in manufacturing. This framework serves as a foundation for further research and practical implementation within the industry.

KEYNOTE 4

Prof. Michael Grieves

University of Central Florida

Honoary Advisor of Digital Twin (Journal)

Biography

Prof. Michael Grieves is an internationally renowned expert on Digital Twins, a concept he originated and continues to publish on, and Product Lifecycle Management (PLM). Dr. Grieves has over five decades of executive (CEO, CTO, EVP, CFO) and board experience in global F1000, entrepreneurial, and non-profit organizations. His discipline expertise involves engineering, manufacturing, operations, research, and finance/accounting. He has consulted and done research at some of the top global organizations (NASA, Boeing, GM, Unilever, US Army). Dr. Grieves is an author of highly cited and seminal books, chapters, and papers and is a frequent keynote speaker on the global stage. Academically, Dr. Grieves has had appointments and done research and/or taught at the University of Michigan, Purdue University, Florida Institute of Technology, and the University of Iowa. He currently is at the University of Central Florida. His doctorate is from Case Western Reserve University.

Title: Digital Twins and the 3rd Millennium Discontinuity: From Physical Trial-and-Error to Goal-Directed Navigation

Abstract

Digital Twins have application across all domains of human life: engineering, manufacturing, healthcare, agriculture, resource management, etc. Human progress has long depended on physical trial-and-error—an approach constrained by time, cost, and wasted scarce resources. In this keynote, Dr. Grieves shows that Digital Twins mark a virtual discontinuity defining the 3rd Millennium. Combined with AI, Digital Twins enable time unconstrained goal-directed navigation in a virtual domain, where information replaces wasted scarce physical resources.

Through continuous replication, prediction, and navigation, Digital Twins enable Front Running Simulation—predicting and evaluating future states before they occur and guiding actions toward defined goals. This represents a shift from reacting to the physical world to proactively navigating it, reducing waste while increasing the probability of successful outcomes.

KEYNOTE 5

Prof. Stefan W. Pickl

Bundeswehr University of Munich
acatech Fellow
Conference Chair of DigiTwin 2025

Biography

Prof. Dr. Stefan W. Pickl received his Ph.D. degree from TU Darmstadt in 1998 and his Habilitation in 2004/2005. From 2000 to 2005, he was a research assistant and project manager at the Center for Applied Informatics Cologne, focusing on modeling, simulation, and optimization of resource conflicts. Since July 2005, he served as the Chair of Operations Research at the Bundeswehr University Munich. Currently, Prof. Pickl is Deputy Chairman of the German Committee for Disaster Risk Reduction (DKKV) and Chairman of the Advisory Board of the German Society for Operations Research (GOR). In 2023, he was elected as a member of the German National Academy of Science and Engineering (acatech). His research interests are IT-based decision-making and process optimization.

Title: Data-driven decision support in complex situations - IRIS Integrated Reachback Information System as hybrid optimization framework: Digital Twins for the Anomaly Detection of Complex Supply Chains

Abstract

The supply chains considered currently need special attention to be optimized on complex disruptions that affect the general security of supply. As part of the research project »OPERA - Future Operations« an interdisciplinary consortium develops a trend-setting interactive visualization tool to support decision makers politics, to adapt and to explore different strategies especially with the aid of digital twins. This talk gives an overview on that project. Furthermore it presents the special sector-based approach IDEA4C as part of the IRIS project:

I - Identification of critical regions, sectors and coupling principles **Cost-Benefit Analysis for critical sectors**
D - Data-driven constraint optimization **Coupled Sector-based Models**
E - Exploratory Strategies/ Recognition of critical pathways and sectors **Characterization of Pathways**
A - Adaptation and Quantifying Analysis **Coordination of Strategies**

This 4C-approach describes a new integrated modelling suite for developing and assessing relief distribution strategies. With the aid of a digital twin "IRIS" approach, anomaly detection should be supported. This hybrid optimization framework as example for IRIS has been conceptualized and is currently being developed with and for experts in the field of disaster and emergency management, in order to tackle the real issues arising during such this crisis.

KEYNOTE 6

Prof. John Erkoyuncu

Cranfield University

Head of the Centre for Digital Engineering and Manufacturing

Biography

John Erkoyuncu is a Professor of Digital Engineering and Head of the Centre for Digital and Design Engineering at Cranfield University. His research interests include: digital twins, augmented reality, and digitalisation of through-life engineering. He has a track record in leading cross Technology Readiness Levels in his research in manufacturing digitalisation with over £12M of funding secured from EPSRC (most recent – as PI: EP/R013950/1 and as Co-I: EP/R032718/1), Innovate UK, AMSCI, and KTP. He has published over 190 journal and conference papers. Prof. Erkoyuncu is currently co-supervising 9 PhD projects; 7 of which are co-funded by industry. He has supervised over 120 MSc projects. John is a Co-Chair of the Through-life Engineering Services Council, Member of the Team Defence Information - Digital Twin Working Group, Council Member of the Digital Twin Hub, Chartered Engineer with IET, Fellow of the Higher Education Association, Associate Member of CIRP, Former Chair of the CIRP Research Affiliates and a Member of IET. He is also the Programme Director for the MSc in Digital and Technology Solutions.

Title: Emerging Opportunities for Digital Twins in Manufacturing

Abstract

This presentation will provide an overview of digital twin applications across the manufacturing sector. The talk will be structured to cover the following topics. Firstly, an overview of the most prominent areas of interest for digital twins in manufacturing will be presented. The will cut across opportunities across design teams, manufacturing processes, and maintenance interventions. This will be followed with how to design and build digital twins considering alternative challenges around data, models, and interoperability. As part of this, the emerging methods and solutions will be discussed with some insights on future directions. The presentation will close with a reflection on the potential benefits from digital twins across manufacturing.

Sub Venue in Beijing

Thursday, 6 Aug 2026

UK Time (UTC+1)	Beijing Time (UTC+8)	Presentation List
02:00	09:00	**Arcraft flight testing: Current status and future trends** He Zhang
02:20	09:20	**Generative design and optimization method for high-performance processing technology of complex structural components** Yida An
02:40	09:40	**makeTwin Digital Twin Industrial Software Architecture and Application Solutions |** Jiangfeng Cheng
03:00	10:00	**Research on the Integration of Production and Logistics in the Metallurgical Industry** Gongzhuang Peng
03:20	10:20	**Digital twin satellite engineering: theory and practical exploration** Weiran Liu
03:40	10:40	**Physics informed deep learning for battery health management** Yupeng Wei
04:00	11:00	**Multi-level reliability evaluations for complex structural systems** Lukai Song
04:20	11:20	*Lunch Break*
07:00	14:00	**A digital twin-based method for shop-floor construction and reconfiguration under uncertainty** Chenyuan Zhang
07:20	14:20	**Multi-Group Digital-Physical Fusion Testing Consistency Error Prediction Based on Multi-Agent Reinforcement Learning** Yanlong Wang
07:40	14:40	**Generative Modeling Method for Digital-Physical Fusion of Aeronautical Equipment Airfoils Based on Diffusion Model** Pengfei Gao
08:00	15:00	**Service performance analyses of CNC machine tools enabled by smart digital twins** Yilin Li
08:20	15:20	**Generative design and optimization method for high-performance processing technology of complex structural components** Yida An
08:40	15:40	**Research on prediction method of production quality defects in melting and casting solidification process driven by digital-analog fusion** Tianyi Gao
09:00	16:00	**Quality Prediction and Optimization Method for Multi-Variety and Variable-Batch Products** Yuanzhe Zhu

Online Sessions

** Online participation is free of charge. Online access is available only for the sessions listed below.*

No.	Session	Chairs
1	Digital Twin Assembly	**Xiaojun Liu** | Southeast University **Qiangqiang Zhao** | Xi'an Jiaotong University **Yang Yi** | Nanjing Forestry University
3	Digital Twin Reliability	**Yi Ren** | Beihang University **Cheng Qian** | Beihang University **He Li** | University of Lisbon **Sifeng Bi** | Beihang University
3	Digital Twin Construction & City	**Yishuo Jiang** | Cornell University **Shuaiming Su** | University of Hong Kong **Svetlana Besklubova** | University of Cambridge **Ray Y. Zhong** | University of Hong Kong
4	Digital Twin Ocean Engineering I	**Jinfeng Liu** | Jiangsu University of Science and Technology **Honggen Zhou** | Jiangsu University of Science and Technology **Henry Tan** | University of Aberdeen **Xuwen Jing** | Jiangsu University of Science and Technology
5	Digital Twin Ocean Engineering II	**Yanjun Liu** | Shandong University **Hongda Shi** | Ocean University of China
6	Digital Twin Network	**Tao Sun** | China Mobile Research Institute **Diego Lopez** | Telefonica I+D **Peter Öhlén** | Sweden
7	Digital Twin Logistics	**Ning Zhao** | University of Science and Technology Beijing **Dianjun Fang** | Tongji University **Wenfeng Li** | Wuhan University of Technology
8	Digital Twin Core Technologies	**Wei Wu** | The Hong Kong Polytechnic University **Zhiheng Zhao** | The Hong Kong Polytechnic University **George Q. Huang** | The Hong Kong Polytechnic University
9	Digital Twin Quality Engineering	**Wensheng Peng** | China Aero-Polytechnology Establishment, AVIC **Pai Zheng** | The Hong Kong Polytechnic University **Ying Zuo** | Beihang University **Xiangchun Zhang** | China Aero-Polytechnology Establishment, AVIC
10	Digital Twins for Resilient and Sustainable Supply Chains	**Evren Sahin** | Université Paris-Saclay **Zhe Yuan** | De Vinci Higher Education **Zhiqiang Wang** | De Vinci Higher Education **Feng Xiang** | Wuhan University of Science and Technology
11	Vertically Integrated Digital Twins for Manufacturing	**Erica Pastore** | Politecnico di Torino **Giovanni Lugaresi** | KU Leuven
12	Digital Twin Machine Tool	**Ying Zuo** | Beihang University **Yongping Zhang** | Beihang University
13	Digital twin Interdisciplinary Frontier	**Chen Cao** | Chinese Academy of Sciences **Jiawei Gong** | The Pennsylvania State University

Digital Twin Assembly

Friday, 7 Aug 2026

VooV Meeting ID: 696 755 455
https://meeting.tencent.com/dm/f8IeTCEOSrd1

UK Time (UTC+1)	Beijing Time (UTC+8)	Presentation List
09:00	16:00	**Digital Twin-Based Multi-processor Job Scheduling with Due Date Assignment for Human-Machine Collaborative Assembly** Jun-Qiang Wang | Northwestern Polytechnical University
09:30	16:30	**Digital Twin Modeling and Application of Mechanics for Assembly Connection Interfaces** Bo Yuan | Dalian University of Technology
10:00	17:00	**Assembly Quality Prediction and Regulation Technology and Its Application** Cunbo Zhuang | Beijing Institute of Technology
10:30	17:30	**An Insight into Key Technologies of Digital Twin Models for Assembly** Huibin Sun | Northwestern Polytechnical University
11:00	18:00	**Digital Twin-Driven Precision Assurance Technology for Aircraft Large Component Docking Assembly** Zhengping Chang | Northwestern Polytechnical University

Digital Twin Reliability

Thursday, 6 Aug 2026

VooV Meeting ID: 750 732 544
https://meeting.tencent.com/dm/LGDgjh6gv6XE

UK Time (UTC+1)	Beijing Time (UTC+8)	Presentation List
13:30	20:30	**Bridging Physics-Based Modeling and Data-Driven Analytics: Towards Robust Digital Twins for Marine Structures** Bai-Qiao Chen | Universidade de Lisboa
13:55	20:55	**Applications of Ship Digital Twins in Maritime Transport: A Systematic Review** Huanhuan Li | University of Southampton
14:20	21:20	**Digital Twins for Safer Decision-Making: Enhancing Risk Awareness and System Reliability** Mohammad Yazdi | Macquarie University
14:45	21:45	**Sparse Bayesian system identification of nonlinear dynamical systems with hysteresis** Masaru Kitahara | Hokkaido University
15:10	22:10	**Physics-Informed Structured Latent Learning for Multimodal Plasma State Inference in Fusion Digitalization: A Tokamak Equilibrium Reconstruction Study** Zifei Xu | University of Liverpool
15:35	22:35	**From Bayesian sampling to data-driven inference in model updating: A generative AI perspective** Tairan Wang | University of Southampton

Digital Twin Construction & City

Day 1 - Thursday, 6 Aug 2026

Zoom ID: 605 394 2399 PWD: 000666
https://cornell.zoom.us/j/6053942399?pwd=swiLbpCVmwfI8OXjdGcSvvznXSHjtK.1

UK Time (UTC+1)	Beijing Time (UTC+8)	New York Time (UTC-4)	Presentation List
13:30	20:30	08:30	**From BIM to Intelligent Safety Digital Twins: An Automated Framework for Agent-Based Fire Risk Management** Jiangdong Li | Zhejiang University
14:00	21:00	09:00	**Knowledge-data driven intelligent generation method of rock tunnel support scheme by drilling and blasting method** Xinyu Kou | Tongji University
14:30	21:30	09:30	**PAT3D: Physics-Augmented Text-to-3D Scene Generation** Guying Lin | Carnegie Mellon University
15:00	22:00	10:00	**Graph-based Automatic Layout Representation and Retrieval for Design Informatics** Song Guo | MIT
15:30	22:30	10:30	**Grey-Box Kalman Filtering for Raster-Grid Emissions Accounting in Digital Twin Cities** Baihe Luan | Georgia Institute of Technology
16:00	23:00	11:00	**Persona-based Digital Twins Framework** Yanpeng Leng | Harvard University

Day 2 - Friday, 7 Aug 2026

Zoom ID: 605 394 2399 PWD: 000666
https://cornell.zoom.us/j/6053942399?pwd=swiLbpCVmwfI8OXjdGcSvvznXSHjtK.1

UK Time (UTC+1)	Beijing Time (UTC+8)	New York Time (UTC-4)	Presentation List
13:30	20:30	08:30	**The impacts of input data on visual-language models (VLM) in automated solid waste recognition** Zhiming Dong | University of Hong Kong
14:00	21:00	09:00	**An Integrated Digital Twin Framework for Intelligent Evacuation: Bridging Perception, Forecasting, and Optimization** Huakai Sun | Zhejiang University
14:30	21:30	09:30	**Interactive Digital Twins and Generative Worlds for Embodied AI** Hongchi Xia | University of Illinois Urbana Champaign
15:00	22:00	10:00	**Enhancing Speckle's Data Architecture: A Graph-Based Approach to Incremental BIM Updates** Kai Dietmair | University of Cambridge, Technical University of Munich
15:30	22:30	10:30	**Mapping the Information Value Chain in the Built Environment: Towards a Planning Framework for Effective Digital Twins** Flavia Pedone | University of Cambridge, Sapienza University of Rome
16:00	23:00	11:00	**Beyond Entity-Centric Models: A Location-Centric Framework for Urban Environmental Data Integration** Hao Yang | Cornell University

Digital Twin Network

Thursday, 6 Aug 2026

VooV ID: 901-877-262
https://meeting.tencent.com/dm/lNZHpck6qu5k

UK Time (UTC+1)	Beijing Time (UTC+8)	Presentation List
09:00	16:00	**Network Digital Twin – A Path from theoretical and experimental Analysis towards Production Networks** Marco Liebsch | NEC Laboratories Europe GmbH
09:30	16:30	**High-Fidelity Digital Twin Networks: Automated Discovery of Distribution-Aware Device Models** Zirui Zhuang | Beijing University of Posts and Telecommunications
10:00	17:00	**Network Digital Twin: From Architecture to AI-Driven Reality** Devanathan Ramachandran Seetharaman | Ericsson
10:30	17:30	**Intent-Driven Autonomous Network Management Based on Digital Twin: From Semantic Understanding to Closed-Loop Validation** Ying Ouyang | Xidian University
11:00	18:00	**Application of Digital Twin in Autonomous Networks** Shiyong Ma | ZTE Corporation

Digital Twin Ocean Engineering I

Friday, 7 Aug 2026

VooV ID: 158-679-395
https://meeting.tencent.com/dm/oOJsFKMwx0gV

UK Time (UTC+1)	Beijing Time (UTC+8)	Presentation List
10:00	17:00	**From Prediction to Decision: Uncertainty-Informed Digital Twin Architectures for Integrity-Critical Engineering Systems** Henry Tan | University of Aberdeen
10:25	17:25	**Engineering Analysis of Scapholunate and Lunotriquetral Ligament Mechanics Under Stabilizing and Failure Conditions** Esteban Peña-Pitarch | Escola Politècnica Superior d'Enginyeria de Manresa (EPSEM-UPC)
10:50	17:50	**AI for Assembly, Welding, and Direct Energy Deposition** Changhui Liu | Tongji University
11:15	18:15	**NC machining process planning of 3+1 Axis CNC machined parts** Rui Huang | HoHai University
11:40	18:40	**Metatwin: A Meta-Level Organization and Constraint-Driven Collaboration Framework for Multi-Digital Twin Systems** Xiaojian Wen | Donghua University

Digital Twin Ocean Engineering II

Thursday, 6 Aug 2026

VooV ID: 286-759-365
https://meeting.tencent.com/dm/yT26ddOeqDI9

UK Time (UTC+1)	Beijing Time (UTC+8)	Presentation List
07:00	14:00	**Study on Orifice Outflow Characteristics of Liquid Level and Pressure Balance Circuit for Polar Thermoelectric Power Generation Device** Weimin Liu | Qingdao Marine Engineering Survey, Design and Research Institute
07:25	14:25	**Digital Twin-driven Autonomous Surface Manipulator System for Ocean Operations** Yi Cai | Hong Kong University of Science and Technology (Guangzhou)
07:50	14:50	**Experimental study on two-body interaction of a floating multi-degree-of-freedom buoy wave energy converter under various degree of freedom configuration: Energy conversion and motion response characteristics** Tongshun Yu | Ocean University of China
08:15	15:15	**Research on optimal control based on dynamic deformation monitoring of wind turbine blades** Peng Qian | Zhejiang University
08:40	15:40	*Break*
08:50	15:50	**CFD Numerical Modelling for Marine Renewable Energy Applications** Robert Mayon | Dalian University of Technology
08:15	16:15	**Theoretical Analysis of Battery Capacity for Marine Observation Instruments Utilizing Ocean Thermal Energy in Polar Winter Waters** Fengyun Chen | The First Institute of Oceanography (FIO)
08:40	16:40	**Study on the energy harvesting and hydrodynamic stability characteristics of a novel floating bridge with wave energy conversion modules** Jun Wang | Harbin Institute of Technology, Weihai
09:05	17:05	**Short-Term Morphological Response of the Haikou West Coast Beach Nourishment Project Based on Integrated Multi-Dimensional Monitoring** Yifan Wang | Harbin Institute of Technology, Weihai
10:30	17:30	**Adaptive Penetration Device for Deep-Sea Sediment CPT** Zhiqiang Zhang | Shandong University
10:50	17:50	**Closing Remarks**

Digital Twin Logistics

Friday, 7 Aug 2026

VooV ID: 895-896-749
https://meeting.tencent.com/dm/O042mFOHgqyf

UK Time (UTC+1)	Beijing Time (UTC+8)	Presentation List
13:00	20:00	**A Digital Twin Framework for Real-Time Railway Bridge Strike Prevention, Detection, and Structural Health Assessment** Ning Zhao | University of Birmingham
13:25	20:25	**Multimodal Decision-Making for Intelligent Warehouse Robotics via Large Language Models and Reinforcement Learning** Peng Guo | Southwest Jiaotong University
13:50	20:50	**Turn-Aware Multi-Agent Path Finding for Scalable AMR Coordination** Chunlong Yu | Tongji University
14:15	21:15	**Operational Optimization and Management Framework for D2C Distribution Centers Based on Digital Models** Ming Li | Shandong Jianzhu University
14:40	21:40	**Mirror the Mind of Crew: Digital Twin-based commissioning of scheduling and control algorithms for logistics equipment** Lei Luo | Beijing Research Institute of Automation for Machinery Industry Co., Ltd

Vertically Integrated Digital Twins for Manufacturing

Thursday, 6 Aug 2026

Microsoft Teams
https://teams.microsoft.com/meet/315447611836001?p=WLlpDWlnoolW6NzAMe

UK Time (UTC+1)	Beijing Time (UTC+8)	Berlin time (UTC+2)	Presentation List
08:00	15:00	09:00	**Validation of Production System Digital Twin: Gaps and Approaches** Bohan Leng, Giovanni Lugaresi | KU Leuven
08:25	15:25	09:25	**A Fatigue-Aware Digital Twin for Human-Centric Flexible Job Shop Scheduling** Junjie Lin, Giovanni Lugaresi | KU Leuven
08:50	15:50	09:50	**A qualification-informed digital twin for adaptive startup tuning in injection molding** Giovanni Lucchetta | University of Padova
09:15	16:15	10:15	**A digital twin architecture for dispatching in semiconductor** Roberto Rosario Corsini, Antonio Costa, Sergio Fichera | Università di Catania
09:40	16:40	10:40	**An integrated Virtual Reality visualization and Computational Fluid Dynamics framework for Mechanical Design of complex industrial products** Dimitris Mourtzis | University of Patras
10:05	17:05	11:05	**Designing a high-fidelity digital twin framework for composition-based aluminum scrap sorting** Haiyang Zhao | Delft University of Technology

Digital Twin Core technologies

Thursday, 6 Aug 2026

Zoom ID: 440 525 7330
https://polyu.zoom.us/j/4405257330?omn=88991319568

UK Time (UTC+1)	Beijing Time (UTC+8)	Presentation List
13:30	20:30	**Digital Twin-enabeld human-robot collaborative assembly** Sichao Liu | École Polytechnique Fédérale de Lausanne
13:45	20:45	**Knowledge-Infused Agentic AI for Orchestrating Continuous Evidence Cycles in Urban Air Quality Digital Twins** Xiang Xie | Newcastle University
14:00	21:00	**Full-Field Modeling and Optimization for Hot Deformation in Aluminum Alloy Forging through Model-Based Reinforcement Learning** Zhaolin Yuan | University of Science and Technology Beijing
14:15	21:15	**Federated Semi-supervised Learning-enabled Analytics for Data Authenticity in Apparel ESG Disclosure** Wei Chen | The University of Hong Kong
14:30	21:30	**Digital Twin-Enabled Energy efficiency Monitoring Method for Mechanical Machining System** You Zhang | Chongqing University
14:45	21:45	**Converged Address Resolution Protocol for Traceability and Visibility in Cyber–Physical Internet** Wenqing Lei | The University of Hong Kong
15:00	22:00	**A Digital Twin–Enabled Bluetooth AoA Indoor Positioning System for Spatial–Temporal Perception in Intelligent Indoor Environments** Pengjun Yue | The Hong Kong Polytechnic University
15:15	22:15	**Moonwalkers: Interoperable Digital Twins for Collaborative Lunar Exploration** Bingbing Forrest Li | California State University Northridge

Digital Twin Quality Engineering

Thursday, 6 Aug 2026

VooV ID: 927-222-677
https://meeting.tencent.com/dm/NpI34OY6DUlo

UK Time (UTC+1)	Beijing Time (UTC+8)	Presentation List
08:30	15:30	**MDTIF:a Model-based Digital Thread Information Framework for smart manufacturing** Qihua Wang | China Aero-Polytechnology Establishment
08:45	15:45	**Empowering predictive maintenance with AI and digital twins** Zhiguo Zeng | Université Paris-Saclay
09:00	16:00	**Updating digital twin in supervisory control and data acquisition for sustainable manufacturing** K Venkata Rao | National Institute of Technical Teachers' Training and Research Kolkata
09:15	16:15	**Towards Embodied Robotic Manufacturing Systems: A Human-in-the-Loop Vision-Language Model and Contact-Rich Learning Approach** Pai Zheng | The Hong Kong Polytechnic University
09:30	16:30	**Key Enabling Technologies of Digital Twin** Cong Peng | Nanjing University of Aeronautics and Astronautics
09:45	16:45	**Information Retrieval in Complex Scenarios** Wen Chen | The Hong Kong Polytechnic University
10:00	17:00	**Application of Digital Twin Idea on Quality Control for Aircraft Structure Assembly** Feiyan Guo | University of Science and Technology Beijing
10:15	17:15	**A Digital Twin-oriented evaluating method for aircraft wing box assembly process parameters based on uncertainty quantification** Jingyue Li | China Aero-Polytechnology Establishment
10:30	17:30	**Toward a Concept of Digital Twin for Monitoring Assembly and Disassembly Processes** Stefano | Politecnico di Torino

Digital Twin for Resilient and Sustainable Supply Chains

Friday, 7 Aug 2026

Microsoft Teams: 369 967 031 061 32 Code secret : tT9w5ZJ7
https://teams.microsoft.com/meet/36996703106132?p=Gkbu4LSYSGwpvR37nI

UK Time (UTC+1)	Beijing Time (UTC+8)	Berlin time (UTC+2)	Presentation List
10:00	17:00	11:00	**Digital Twin-Driven Cyber-Resilient Supply Chains** Sabah Suhail | Munster Technological University (MTU)
10:25	17:25	11:25	**Designing Sustainable Urban Logistics Systems: Insights from Multimodal Last-Mile Delivery Research** Angie Ramirez-Villamil | De Vinci Higher Education
10:50	17:50	11:50	**Integrating Public Transportation and Drones for Sustainable Urban Logistics: A Bus-Drone Delivery Framework** Sam BAN | De Vinci Higher Education
11:15	18:15	10:15	**Pooling Inventory and Information: A Data-Driven Approach under Demand Censoring** Xiaoli Su | Fuzhou University
11:40	18:40	10:40	**A cloud–based digital twin system for navigation of unmanned aerial vehicles** Wei Meng | Guangdong University of Technology

Digital Twins Machine Tool

Thursday, 6 Aug 2026

VooV ID: 783-174-009
https://meeting.tencent.com/dm/8z9wE7jdb0PZ

UK Time (UTC+1)	Beijing Time (UTC+8)	Presentation List
07:00	14:00	**Large Language Models for Intelligent Forward Design of Machine Tools** Bo Yang | Chongqing University
07:15	14:15	**Laser-Ultrasonic Vibration Composite-Assisted Cutting Technology and Equipment for Thin Silicon Wafers** Qiang Liu | Ji Lin University
07:30	14:30	**TBC** Yujia Hu | University of Shanghai for Science and Technology
07:45	14:45	**Process-oriented function-triggered digital twin game field for service-expansion in large-sized workpiece manufacturing** Shengqiang Zhao | Nanjing University of Aeronautics and Astronautics
08:00	15:00	**Digital Twin-Driven Modeling and Analysis of Dynamic Characteristics for Ceramic Motorized Spindle Under Thermal-Magnetic Fields** Zinan Wang | Shenyang Jianzhu University

Digital twin Interdisciplinary Frontier

Friday, 7 Aug 2026

Voov ID : 710-347-4656
https://meeting.tencent.com/p/7103474656

UK Time (UTC+1)	Beijing Time (UTC+8)	Presentation List
14:00	21:00	**Digital Twin-enabled Situational Awareness and Dynamic Cyber Defense for Industrial Systems** Chen Cao | Chinese Academy of Sciences
14:20	21:20	**From Single - Junction Devices to Tandem Deployment in Space** Jiawei Gong | The Pennsylvania State University
14:40	21:40	**Digital Twin: Enabling Proactive Cybersecurity for Industrial Infrastructure** Xushu Dai | The Pennsylvania State University
15:00	22:00	**Towards Cyber-by-Design Security for Digital Twins: Implementing Zero Trust Architecture** Abdelhadi Belfadel | Institut de Recherche Technologique SystemX
15:20	22:20	**Building Interoperable Digital Twins: The FARI Digital Twin Platform use-case** Susheel Nath | FARI – AI for the Common Good Institute, Brussels

Special Sessions

DigiTwin 2026 gratefully acknowledges the contributions of the Special Session Chairs who proposed and organised focused sessions for the conference. Following the final programme optimisation, accepted presentations from these Special Sessions have been integrated into the final conference programme and are included in the relevant sessions listed in the onsite programme section of this handbook.

No.	Session Proposal	Chairs
1	Digital Twin Design	**Zhinan Zhang** | Shanghai Jiao Tong University **Ang Liu** | University of New South Wales
2	Digital Twin Smart Manufacturing	**Tianliang Hu** | Shandong University **Giovanni Lugaresi** | KU Leuven
3	Engineering Digital Twin	**Benoit Combemale** | Inria & University of Rennes **Andreas Wortmann** | University of Stuttgart **Nabil Anwer** | University Paris-Saclay **Stephen Creff** | Institute of Research and Technology SystemX
4	Digital Experiment, Testing & Validation	**Kuo Tian** | Dalian University of Technology **Qiang Yang** | Harbin Institute of Technology **Qiang Chen** | Southeast University **Fabio Sousa** | Universidade Federal do Rio Grande do Norte, UFRN
5	Digital Twin Energy & Power	**Tianjiao Pu** | China Electric Power Research Institute **Sheng Chen** | China Electric Power Research Institute
6	Digital Twin Adoption and Value Realisation	**Christian Kober** | ETH Zurich **Riku Ala-Laurinaho** | Aalto University

DigiTwin 2026

The 6th Digital Twin International Conference

August 4-8, 2026

University of Oxford · UK

Conference Website

LinkedIn Account