



2024 13th International Conference on Transportation and Traffic Engineering (ICTTE 2024)



2024 3rd International Conference on Mechanical Engineering and Power Engineering (MEPE 2024)

Wuhan, China | December 28-30, 2024

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Venue: Zmax Carrey International Hotel, 潮漫凯瑞国际酒店

Add.: No.408 Gaoxin Avenue, Donghu High-tech Development Zone, Wuhan China, 武汉市东湖新技术开发区高新大道 408 号

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WELCOME MESSAGE

Dear all, we are delighted to welcome you to these conferences 2024 13th International Conference on Transportation and Traffic Engineering (ICTTE 2024), along with 2024 3rd International Conference on Mechanical Engineering and Power Engineering (MEPE 2024) to be held in Wuhan, China during December 28-30, 2024, which is sponsored by Wuhan University of Technology (WHUT), China, hosted by the School of Navigation, WHUT, and supported by Tongji University, China, the Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University, China and RMIT University, Australia.

The objective of the conference is to provide a premium platform to bring together researchers, scientists, engineers, academics and graduate students to share up-to-date research results. We are confident that during this time you will get the theoretical grounding, practical knowledge, and personal contacts that will help you build a long term, profitable and sustainable communication among researchers and practitioners in the related scientific areas.

This year's program is composed of the keynote speeches delivered respectively by Prof. Miguel Angel Sotelo (Fellow, IEEE & Fellow, AAIA, University of Alcalá, Spain), Prof. Xinyu (Jason) Cao (University of Minnesota, USA), Prof. Longyuan Li (University of Plymouth, UK), Prof. Housheng Su (国家杰出青年科学基金获得者, Huazhong University of Science and Technology, China), and invited talks delivered respectively by Dr. Nigar Ahmed (Dalian Maritime University, China), Dr. Yujiao Zhao (University of Jinan, China) with 4 on-site technical sessions, 4 online technical sessions and 2 poster sessions. We would like to express our gratitude to all the speakers in these conferences. Special thanks to all of our committee members, all the reviewers, the attendees for your active participation. We hope the conferences will be proved to be intellectually stimulating to us all. Finally, we wish you very successful conferences!

Conference Organizing Committee

Contact Us

ICTTE 2024

Ms. Kristen Zhang

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MEPE 2024

Ms. Rachel Cao

Email: mepe_conf@yeah.net

CONFERENCE COMMITTEE

(in no particular order)

Conference Advisory Committees

Prof. Miguel Angel Sotelo (Fellow, IEEE & Fellow, AAIA), University of Alcalá, Spain

Prof. Longyuan Li, University of Plymouth, UK

Prof. Xianguo Li, University of Waterloo, Canada

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Assoc. Prof. Hu Lina, Xinjiang University, China
Asst. Prof. Ekkachai Sutherasak, Burapha University, Thailand
Asst. Prof. Fuying Chen, Guangxi University, China
Asst. Prof. Wenyu Jiang, Shenzhen University, China
Asst. Prof. Liang Fan, Wuhan University of Technology, China
Asst. Prof. Jamal Al Sadi, Jadara University, Irbid, Jordan
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Dr. Yao Li, Chengdu University of Information Technology, China
Dr. Nirajan Shiwakoti, RMIT University, Australia
Dr. Fengfeng Huo, Lucchini Railway Equipment Co.,Ltd., China
Dr. Zhaocun Liu, Chongqing Jiaotong University, China

Dr. Koorosh Gharehbaghi, RMIT University, Australia
Dr. Jia Hu, Tongji University, China
Dr. Weeradej Cheewapattananuwong, Thammasat University, Thailand
Dr. Hemant Kumar Sharma, RUIFDCO & MNIT Jaipur, India
Dr. Soon Jiann Tan, Universiti Teknologi Brunei, Brunei Darussalam
Dr. Ke Zhang, Tsinghua University, China
Dr. Liang Ma, Southwest Jiaotong University, China
Dr. Bin Mei, Dalian Maritime University, China
Dr. Shangbo Wang, Xi'an Jiaotong Liverpool University, China
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Dr. Nasrul Azuan Alang, Universiti Malaysia Pahang, Malaysia
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GENERAL INFORMATION

A Conference Venue



Venue: Zmax Carrey International Hotel

会场: 潮漫凯瑞国际酒店

Add.: No.408 Gaoxin Avenue, Donghu High-tech Development Zone, Wuhan China

地址: 武汉市东湖新技术开发区高新大道 408 号

Tel: +86 18995595594

B On-site Registration

Registration desk → Inform the staff of your paper ID → Sign-in → Claim your conference kits.

C Devices Provided by the Organizer

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

D Materials Provided by the Presenter

Oral Session: Slides (pptx or pdf version). Format 16:9 is preferred.

Poster Session: Format A1 size is preferred.

Presentation Language: English only.

E Duration of Each Presentation

Keynote Speech: 45min, including 5min Q&A.

Invited Speech: 25min, including 5 min Q&A.

Oral Session: 10min, including 2 min Q&A.

Poster Session: 7min, including 2 min Q&A.

F Notice

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

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

G Zoom Meeting

 Zoom	Room	Meeting ID	Link
	✓ Zoom Download ✓ Zoom Background ✓ Conference Banner	A	884 6954 8520
	B	843 9327 8045	https://us02web.zoom.us/j/84393278045

Note:

- We recommend to install the Zoom platform beforehand. New users can login the Zoom meeting **without registration**.
- Please set your display name before joining the online meeting. For instance,
 Committee/Speaker: Committee/Speaker_Name < Committee/Speaker_Veronica Reed >
 Author/Presenter: Paper ID_Name < CT001_Veronica Reed >
 Delegate: Delegate_Name < Delegate_Veronica Reed >

AGENDA OVERVIEW

SATURDAY, DECEMBER 28, 2024 (UTC+8)

10:00~17:00	On-site Registration <Lobby, 1F>
9:30~12:00	Zoom Test Session (Room A: 884 6954 8520, Link: https://us02web.zoom.us/j/88469548520)
9:30~10:00	CT5004 CT532 CT537 CT578 CT596 CT520 CT583 CT555 CT632 CT631
10:00~10:30	CT5001 CT514 CT516 CT518 CT539 CT542 CT607 CT603 CT561 CT728
10:30~11:00	CT702 CT526 CT531-A CT547 CT594 CT558 CT701 CT719 CT633
11:00~11:30	CT523 CT543 CT511 CT548 CT620 CT709 CT717 CT706 CT729
11:30~12:00	For other online participants, includes but not limited to keynote speaker, session chair, committee member, delegate, etc.

Presenters are required to join the rehearsal in Zoom on Saturday, December 28. Duration: 2~3min apiece. Feel free to leave after you finish the test.

AGENDA OVERVIEW

SUNDAY, DECEMBER 29, 2024 (UTC+8)

Plenary Session | <凯瑞之光壁画厅, 1F> | Room A: 884 6954 8520, <https://us02web.zoom.us/j/88469548520>

Chairman: **Yong Ma**, Wuhan University of Technology, China (Deputy Dean of School of Navigation; Conference Organizing Chair)
 武汉理工大学航运学院副院长; 国家优秀青年科学基金获得者

09:00~09:10
 Opening Speech
Rong Luo, Wuhan University of Technology, China (Vice President)
 武汉理工大学党委常委、副校长; 万人计划领军人才

Chairman: **Yuanzhou Zheng**, Wuhan University of Technology, China (Conference Organizing Co-Chair)

09:10~09:55
On-site
 Keynote Speech I
"Enlightening the Relationship between Land Use and Travel through Machine Learning"
Xinyu (Jason) Cao, University of Minnesota, USA

09:55~10:40
On-site
 Keynote Speech II
"Durability Problems of Infrastructure in Transportation Engineering"
Longyuan Li, University of Plymouth, UK

10:40~11:10
Group Photo / Coffee Break <1F>

Chairman: **Chunhui Zhou**, Wuhan University of Technology, China (Conference Organizing Co-Chair)

11:10~11:55
On-site
 Keynote Speech III
"Coordinated Control and Distributed Observation of Cross Domain Unmanned Systems"
Housheng Su, Huazhong University of Science and Technology, China
 国家杰出青年科学基金获得者

11:55~13:30
Lunch Time (Restaurant <2F>)

SUNDAY, DECEMBER 29, 2024 (UTC+8) | Technical Session (On-site)

13:30~15:15	On-site Session 1: Advanced Electronic Systems and Application Technologies Invited Talk: Nigar Ahmed , Dalian Maritime University, China CT705-A CT716 CT725 CT715 CT718 CT703 CT710 CT730	<樱花厅, 2F>
13:30~15:15	On-site Session 2: Intelligent Robots and Control Systems Invited Talk: Yujiao Zhao , University of Jinan, China CT722-A CT708 CT522 CT593 CT714 CT723-A CT551 CT707	<贵宾厅, 3F>
13:30~15:15	Poster Session 1: Modern Intelligent Transportation System and Transportation CT527 CT559 CT528 CT585 CT530 CT572 CT613 CT529 CT628 CT534 CT510 CT536 CT553 CT560 CT608	<凯瑞之光壁画厅外, 1F>

15:15~15:40
Coffee Break <2F>

Keynote Session | <贵宾厅, 3F> | Room A: 884 6954 8520, <https://us02web.zoom.us/j/88469548520>

15:40~16:10
Online
 Keynote Speech IV
"Prediction of Behaviour in Autonomous Driving - The Use of Context as a key for Explainability"
Miguel Angel Sotelo, University of Alcalá, Spain (Fellow, IEEE & Fellow, AAIA)

Technical Session (On-site)		
16:10~17:50	On-site Session 3: Ship Navigation and Intelligent Navigation Technology CT7001 CT580 CT622 CT625 CT545 CT579 CT626 CT550 CT623 CT5002	<樱花厅, 2F>
16:10~17:40	On-site Session 4: Modern Urban Logistics System and Transportation CT512 CT509 CT525 CT513 CT546 CT597 CT521 CT600 CT576-A	<贵宾厅, 3F>
16:10~17:55	Poster Session 2: Application of Artificial Intelligence in Transportation and Power Systems CT720 CT588 CT731 CT589 CT535 CT564 CT570 CT573 CT581 CT582 CT5003 CT549 CT724 CT726 CT609	<凯瑞之光壁画厅外, 1F>
18:00~20:00	Dinner Time (Restaurant <2F>)	

AGENDA OVERVIEW

MONDAY, DECEMBER 30, 2024 (UTC+8) | Technical Session (Online)

<Room A: 884 6954 8520, <https://us02web.zoom.us/j/88469548520>>

9:30~11:00

Online Session 1: Urban Road Network Model and Public Transportation Construction

CT5004 CT532 CT537 CT578 CT596 CT520 CT583 CT632 CT631

13:30~15:10

Online Session 3: Unmanned Control Systems and Intelligent Technologies

CT702 CT526 CT531-A CT547 CT594 CT558 CT701 CT719 CT728 CT633

<Room B: 843 9327 8045, <https://us02web.zoom.us/j/84393278045>>

9:30~11:00

Online Session 2: Modern Urban Logistics and Distribution

CT5001 CT514 CT516 CT518 CT539 CT542 CT607 CT603 CT561

13:30~15:10

Online Session 4: Aircraft System Control and Intelligent Transportation Systems

CT523 CT543 CT511 CT548 CT620 CT709 CT717 CT706 CT729 CT555

INTRODUCTION OF KEYNOTE SPEAKER

09:10-9:55 | Dec. 29, 2024 | 凯瑞之光壁画厅 <1F>

Room A: 884 6954 8520, <https://us02web.zoom.us/j/88469548520>



Xinyu (Jason) Cao

University of Minnesota, USA

Enlightening the Relationship between Land Use and Travel through Machine Learning

Abstract: As a conventional approach to uncovering the relationships between variables, data modeling usually requires a priori assumption. However, if this assumption does not hold true, data modeling may yield questionable findings and theories. This presentation highlights the power of machine learning approaches in improving our understanding of the relationship between variables. Using examples in the field of land use and travel behavior, the presenter demonstrates that these approaches can (1) correct wrong conclusions from data modeling; (2) identify seemingly important but impractical land use interventions; and (3) discover interaction effects between variables without prior knowledge.

Biography: Dr. Xinyu Cao is a professor at the Humphrey School of Public Affairs, University of Minnesota, Twin Cities and a visiting scholar of Chang'an University. He specializes in land use and transportation interaction and planning for quality of life. He has published more than 140 peer-reviewed papers and edited four books. Dr. Cao is internationally well-known for his research on residential self-selection in the relationships between the built environment and travel behavior. He is currently leading the area of machine learning applications in land use and transportation research. Dr. Cao is the Co-Editor-in-Chief of Transportation Research Part D and an associate editor of Transport Policy and Journal of Planning Education and Research. Dr. Cao received his degrees from the University of California, Davis and Tsinghua University.

INTRODUCTION OF KEYNOTE SPEAKER

09:55-10:40 | Dec. 29, 2024 | 凯瑞之光壁画厅 <1F>

Room A: 884 6954 8520, <https://us02web.zoom.us/j/88469548520>



Longyuan Li

University of Plymouth, UK

Durability Problems of Infrastructure in Transportation Engineering

Abstract: Durability is a critical factor in ensuring the long-term performance and safety of infrastructure in transportation engineering. This presentation addresses the durability challenges faced by key structural components of transportation systems, including road pavements, tunnels, bridges, and railway infrastructure. It highlights how geopolymers, derived from industrial by-products, can be applied to road pavements to mitigate the effects of climate change and increasing traffic loads. Additionally, these materials can enhance tunnel safety under extreme conditions by improving the structural integrity and fire resistance of tunnel linings. For bridges and railway infrastructure, the presentation demonstrates the use of electrochemical methods to prevent corrosion of reinforcing steel in concrete, thereby improving the overall durability of concrete structures. This presentation offers an in-depth exploration of the latest advancements in materials and technologies aimed at enhancing the durability of transportation infrastructure, ultimately contributing to safer and more sustainable transportation networks.

Biography: Professor Long-yuan Li is Professor of Structural Engineering in School of Engineering, Computing and Mathematics at University of Plymouth, UK. Professor Li's research interests cover the fields of mechanics of materials, durability, reliability, and fire safety of RC structures. He has published over 200 technical papers in SCI journals with Scopus h-index 45. Professor Li is the Fellow of the Alexander von Humboldt Foundation (Germany), Fellow of the UK Higher Education Academy, and Fellow of the Institution of Structural Engineers (UK). He is the Member of EPSRC Peer Review College, Member of UK Society for Computational Mechanics in Engineering, Member of UK Concrete Society, and Member of International Society for Interaction of Mechanics and Mathematics. Currently, Prof Li is the editor of "Construction and Building Materials" journal, member of editorial boards of "Cement and Concrete Composites", "Magazine of Concrete Research", "Journal of Marine Engineering & Technology", etc. 6 international journals.

INTRODUCTION OF KEYNOTE SPEAKER

11:10-11:55 | Dec. 29, 2024 | 凯瑞之光壁画厅 <1F>

Room A: 884 6954 8520, <https://us02web.zoom.us/j/88469548520>



Housheng Su

Huazhong University of Science and Technology, China

Coordinated Control and Distributed Observation of Cross Domain Unmanned Systems

Abstract: This report first introduces the modeling and controllability analysis of cross domain unmanned systems (UAVs and USVs) collaborative networks, focusing on the characteristics of multi-time scales and dispersion of cross domain unmanned systems, and then provides research progress in distributed observation, distributed interval observation, and mobile distributed observation.

Biography: Housheng Su received the Ph.D. degree in control theory and control engineering from Shanghai Jiao Tong University, Shanghai, China, in 2008. He is currently a Full Professor with the School of Artificial Intelligence and Automation, Huazhong University of Science and Technology, Wuhan, China. His research interests lie in the areas of multiagent coordination control theory and its applications to autonomous robotics and mobile sensor networks. Dr. Su received the National Science Fund for Distinguished Young Scholars of China in 2024. He is an Associate Editor of the IEEE Transactions on Systems, Man, and Cybernetics: Systems and the IET Control Theory and Applications.

INTRODUCTION OF KEYNOTE SPEAKER

15:40-16:10 | Dec. 29, 2024 | 贵宾厅 <3F>

Room A: 884 6954 8520, <https://us02web.zoom.us/j/88469548520>



Miguel Angel Sotelo

Fellow, IEEE & Fellow, AAIA
University of Alcalá, Spain

Prediction of Behaviour in Autonomous Driving - The Use of Context as a key for Explainability

Abstract: Self-driving cars have experienced a booming development in the latest years, having achieved a large degree of maturity. Their scene recognition capabilities have improved in an impressive manner, especially thanks to the development of Deep Learning techniques and the availability of immense amounts of data contained in well-organized public datasets. But still, self-driving cars exhibit limited ability to deal with certain types of situations that become natural to human drivers, such as entering a congested round-about, predicting the presence of occluded pedestrians at cross-walks, dealing with cyclists, or giving way to a vehicle that is aggressively merging onto the highway from a ramp lane. All these tasks require the development of advanced prediction capabilities that rely on contextual reasoning in order to anticipate the most likely behaviours and trajectories for all traffic agents around the ego-car. In addition, predicting and understanding the behaviour of other road users opens the gate to the development of trustworthy and friendly-interacting autonomous vehicles. This talk will present some innovative solutions for explainable road users' behaviour prediction in the context of autonomous driving as well as the way these predictions can be leveraged to implement optimal interactions between autonomous vehicles and road users. Latest results achieved in the framework of the EU-funded BRAVE and HEIDI projects will be discussed as a corner stone to shed light on the path forward in this field.

Biography: Miguel Angel Sotelo received the degree in Electrical Engineering in 1996 from the Technical University of Madrid, the Ph.D. degree in Electrical Engineering in 2001 from the University of Alcalá, Spain, and the Master in Business Administration (MBA) from the European Business School in 2008. He is currently a Full Professor at the Department of Computer Engineering of the University of Alcalá. His research interests include Self-driving cars and Predictive Systems for road users' behaviours. He is author of more than 320 publications in journals, conferences, and book chapters. He is in the top 1% of the most influential researchers worldwide according to the ranking elaborated by the University of Stanford. Prof. Sotelo has been the Principal Investigator of 54 Research Projects and has supervised ~1.300 person-months in International, National, and Industrial projects, raising substantial funding from the European Commission, Spanish Funding Agencies, and Industry. Prof. Sotelo has presented 40 invited keynotes in international conferences, workshops, and seminars in the USA, Canada, Australia, New Zealand, India, Japan, China, Germany, France, Sweden, Italy, Spain, The Netherlands, Portugal, Romania, Czech Republic, Egypt, Morocco, Argentina, Columbia, Mexico, Panama, and Nicaragua (an average of 5 invited keynotes per year in the last 4 years). He has been a member of PhD International Juries at the University of Chalmers (Sweden), Universities of Coimbra and Aveiro (Portugal), Université de Compiègne and Mines Paris Tech (France), Technical University of Delft (The Netherlands), Karlsruhe Institute of Technology (Germany), Technical University of Graz (Austria), and University of Sydney (Australia). Miguel Angel Sotelo has served as Project Evaluator, Rapporteur, and Reviewer for the European Commission in the field of ICT for Intelligent Vehicles and Cooperative Systems in FP6 and FP7. More Details: <https://www.ictte.org/keynote.html>

INTRODUCTION OF INVITED SPEAKER

13:30-13:55 | Dec. 29, 2024 | 櫻花厅 <2F>



Nigar Ahmed

Dalian Maritime University, China

Improving the Performance of UAVs in Transportation Systems through Disturbance-Observer Based Control

Abstract: Autonomous vehicles, particularly unmanned aerial vehicles (UAVs), are critical components of future transportation systems. These vehicles must perform reliably and safely despite operational challenges, such as internal and external disturbances, model uncertainties, sensor and actuator faults, and computation delays. While conventional adaptive and robust control techniques can address some of these issues, they often struggle to maintain stability and performance under high-maneuvering conditions, a common scenario in UAV operations. To overcome these limitations, this presentation explores disturbance observer-based control (DOBC) techniques. DOBC enhances system robustness by effectively rejecting disturbances and uncertainties in real-time, ensuring UAVs achieve desired control objectives even in dynamic and unpredictable environments. By integrating disturbance attenuation with high-performance control, this approach offers a promising solution for enhancing the reliability and safety of UAVs, advancing their role in autonomous transportation networks and applications such as air mobility and logistics.

Biography: Nigar Ahmed is currently a Postdoctoral Researcher in Artificial Intelligence and Marine Robotics at the College of Marine Electrical Engineering, Dalian Maritime University, Dalian, China. From October 2021 to December 2022, he served as a Scientific Researcher at the Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia.

He earned his Ph.D. in Control Theory and Control Engineering from the Nanjing University of Aeronautics and Astronautics (NUAA), Nanjing, China. He completed his M.Sc. degree in Electrical Engineering (Control Systems) from the National University of Sciences and Technology (NUST), Islamabad, Pakistan, in 2015. and B.Sc. degree in Electrical Engineering (Power) from COMSATS University, Abbottabad, Pakistan, in 2012, and his research interests focus on flight control and disturbance observer-based control for unmanned aerial vehicles (UAVs).

INTRODUCTION OF INVITED SPEAKER

13:30-13:55 | Dec. 29, 2024 | 贵宾厅<3F>



Yujiao Zhao

University of Jinan, China

Autonomous Path Following of Surface Vessels via Deep Reinforcement Learning

Abstract: This report first outlines the current status of research on surface vessel path following technology, examines the challenges encountered in surface vessel path following, and then introduces the research progress of surface vessel path following solutions utilizing deep reinforcement learning methods.

Biography: Yujiao Zhao received the Ph.D. degree in traffic information engineering and control from Wuhan University of Technology, Wuhan, China, in 2024. He is currently a lecturer with the School of Information Science and Engineering, University of Jinan, Jinan, China. His research interests include autonomous path following of surface vessels, deep reinforcement learning, and surface vessels formation control. Currently, he has published 10 papers in international high-quality journals such as IEEE TNLS, TITS, OE, APOR, etc.

ON-SITE SESSION 1

SUNDAY, DECEMBER 29, 2024 <13:30~15:15>

<櫻花厅, 2F>

Session Title: Advanced Electronic Systems and Application Technologies

Chairperson: Dr. Nigar Ahmed, Dalian Maritime University, China

13:30~13:55 Invited Talk	Improving the Performance of UAVs in Transportation Systems through Disturbance-Observer Based Control Dr. Nigar Ahmed , Dalian Maritime University, China
13:55~14:05 CT705-A	Vibration instability of a rotor in axial-field permanent magnet motors with a foundation movement Chunhua Xia , Tianjin University, China
14:05~14:15 CT716	An Improved Current Controller with a Ramp-Based Adaptive Factor for Three-Phase LCL-Type Grid- Connected Inverter Weibiao Wu , Wuhan Textile University, China
14:15~14:25 CT725	A Coating with Microstructured Surface for Power Equipment Anti-condensation Siwei Pan , Electric Power Research Institute of Guangdong Power Grid Co., Ltd., China
14:25~14:35 CT715	Evaluation on the impact arisen from transmission channel capacity in offshore wind power integration Sui Peng , Grid Planning and Research Center Guangdong Power Grid Corporation, CSG Guangzhou, China
14:35~14:45 CT718	Discussion on Ground Verification Test Methods for Typical Mechanisms of Mars Probes Yueyang Zhao , Beijing Institute of Spacecraft Environment Engineering, China
14:45~14:55 CT703	Performance Evaluation of Shape Memory Alloy (SMA) Helical Coil: Influence of Mandrel Size and Wire Diameter Zhi Ling Tai , Western Digital Tech and Regional Center (M) Sdn. Bhd, Malaysia
14:55~15:05 CT710	Payload Mounting and Separation of UAV Based on Electro-Permanent Magnetic Chucks Feng Bo-qi , College of Mechanical Engineering, Zhejiang University of Technology and Ningbo Institute of Materials Technology & Engineering, Chinese Academy of Sciences, Ningbo, China
15:05~15:15 CT730	Design of an EML actuator and experimental verification of active-passive broadband micro-vibration isolation Ziqi Zhou , Shanghai University, China

ON-SITE SESSION 2

SUNDAY, DECEMBER 29, 2024 <13:30~15:15>

<贵宾厅, 3F>

Session Title: Intelligent Robots and Control Systems

Chairperson: Dr. Le Sun, Jinggangshan University, China

13:30~13:55 Invited Talk	Autonomous Path Following of Surface Vessels via Deep Reinforcement Learning Dr. Yujiao Zhao , University of Jinan, China
13:55~14:05 CT722-A	Deformation Simulation and Design of Magnetic Soft Robots Based on the Principle of Minimum Potential Energy Zili Wang , Tsinghua University, China
14:05~14:15 CT708	Design of FDM full-color 3D printer based on four primary colors Le Sun , Jinggangshan University, China
14:15~14:25 CT522	How System Accuracy Affects the Evolution of Drivers' Human Trust towards Intelligent Driving? An Eye-tracking Study based on Simulated Driving Experiment Waner Luo , Shenzhen University, China
14:25~14:35 CT593	Design and implementation of dynamic parameter adaptive tracking controller with unknown vehicle parameters Jiangjun Huang , Southwest Jiaotong University, China
14:35~14:45 CT714	Research on Injection Volume Closed-loop Control of High-pressure Common Rail Fuel Injection System Based on Model Predictive Control Xiongqin Li , Harbin Engineering University, China
14:45~14:55 CT723-A	Multi-physics coupling simulation and design of magnetic field-driven soft microrobots in liquid environments Zhaoxin Li , Tsinghua University, China
14:55~15:05 CT551	Analysis of Influence of strong electromagnetic pulse interference on Performance of traction brake system Zhiyao Yin , Beijing Jiaotong University, China
15:05~15:15 CT707	Study on Pomelo Peeling Machine Based on Virtual Prototype Technology TaoYuhan , Jinggangshan University, China

POSTER SESSION 1

SUNDAY, DECEMBER 29, 2024 <13:30~15:15>

<凯瑞之光壁画厅外, 1F>

Session Title: Modern Intelligent Transportation System and Transportation

Chairperson: Asst. Prof. Yuxin Niu, Research Institute of Highway, Ministry of Transport, China

1 CT527	Research on Evaluation of Scientific Expedition Port Service Level Based on Combination Weighting - Set Pair Analysis Fang Zehao , Wuhan University of Technology, China
2 CT559	Research on Coordinated Development of Cargo Transport Network and Rural Industry Revitalization: A Case Study of Qinba-Liupan Mountain area Yansu Mao , Beijing Jiaotong University, China
3 CT528	GA-PSO Solution for the Joint Scheduling Problem of Berths and Gantry Cranes at Multi-Purpose Terminals Considering Scientific Research Zhihao Deng , Wuhan University of Technology, China
4 CT585	key nodes Identification of multimodal transport in northwest China Using Complex Network Theory NIE Pan-pan , Lanzhou Jiaotong University, China
5 CT530	Analysis of the Freight Transportation Network in the Changjiang Middle Reaches Megalopolis Based on Complex Network Theory Xu Haoran , Wuhan University of Technology, China
6 CT572	A prior detection method for track irregularity based on dual-antenna attitude determination Yixiang Wang , Beijing Jiaotong University, China
7 CT613	Research on spatial correlation network structure and influencing factors of green logistics efficiency in western land and sea new corridor GUO Ya-ting , Lashou Jiaotong University, China
8 CT529	Marine Route Network Construction and Traffic Flow Analysis for Ship Intelligent Navigation Zhiang Wang , Wuhan University of Technology, China
9 CT628	A Strategic Suspension is Needed: An Analysis on the Pace of Robotaxi's Commercialization Qian Ye , Research Institute of Highway, Ministry of Transport, China
10 CT534	Hot topic detection and trend analysis in the field of maritime safety supervision Yu Chen , Wuhan University of Technology, China
11 CT510	The Two-stage Joint Decision-making Model of Multi-objective Path Selection and Flow Allocation in Multimodal Network Ruobing Li , Nanjing University of Aeronautics and Astronautics, China
12 CT536	Research on the Measurement of Integration of Port-Industry-City Development: The Case of Qingdao Tongxia Zhang , Wuhan University of Technology, China

13 CT553	Crew Scheduling Optimization Considering Time Cost for Metro Loop Lines with Multiple Relief Points Shiwei He , Beijing Jiaotong University, China
14 CT560	The Impact of Structural Limiting and Changing on Human Mobility Properties: A Network Perspective Lujin JIA , Chang'an University of Economics and Management, China
15 CT608	Research on Port Integration Efficiency Improvement Path Based on Competition and Cooperation Game Longyan Gao , Dalian maritime university, China

ON-SITE SESSION 3

SUNDAY, DECEMBER 29, 2024 <16:10~17:50>

<櫻花厅, 2F>

Session Title: Ship Navigation and Intelligent Navigation Technology

Chairperson: Dr. Zhi Yuan, Wuhan University of Technology, China

16:10~16:20 CT7001	Pose Prediction Method of Ship Simulation Motion Platform with Stewart Mechanism FU Le , Jiangsu University of Science and technology, China
16:20~16:30 CT580	Spatial Autocorrelation Analysis Method of Ship Conflict Grounded in Moran' s I. and Getis-Ord Gi* Indices Yukun Li , Wuhan University of Technology, China
16:30~16:40 CT622	Real-time Extraction Method for Ship Berthing Information Based on 3D LiDAR Jiahao Wang , Wuhan University of Technology, China
16:40~16:50 CT625	Research on Ship Abnormal Behavior Recognition Based on Spatiotemporal Dependency Qianhao Xu , Wuhan University of Technology, China
16:50~17:00 CT545	Seasonal analysis and prediction of CARFI index based on CNN Haoze Su , Wuhan University of Technology, China
17:00~17:10 CT579	Berth allocation and vessel shifting optimization in terminals with irregular layouts Yun Ji , Shanghai Maritime University, China
17:10~17:20 CT626	Complex network-based identification of critical vessels in offshore wind farm areas Hao Zhang , Wuhan University of Technology, China
17:20~17:30 CT550	The research framework and prospect of ship intelligent navigation reliability Tianyue Zou , Wuhan University of Technology, China
17:30~17:40 CT623	Research on High-Risk Ship Identification and Collision Risk Control Strategies Based on AIS Data Jia Li , Wuhan University of Technology, China
17:40~17:50 CT5002	A Novel Ship Trajectory Prediction Method Based on E-Informer Xiaoyun Wang , Wuhan University of Technology, China

ON-SITE SESSION 4

SUNDAY, DECEMBER 29, 2024 <16:10~17:40>

<贵宾厅, 3F>

Session Title: Modern Urban Logistics System and Transportation

**Chairperson: Prof. Jie Ma, Wuhan University of Technology, China
Assoc. Prof. Yi Liu, Wuhan University of Technology, China**

16:10~16:20 CT512	Recognition of Drivers' Mental Workload in Simulated Driving using EEG Signals from Different Brain Regions and Machine Learning Algorithms Jiaqi Huang , Shenzhen University, China
16:20~16:30 CT509	Optimisation of low-carbon distribution routing in cold chain logistics based on pure electric vehicles Ling Zhang , Liaoning Technical University, China
16:30~16:40 CT525	Game Analysis of Ride hailing and Urban Public Transportation Based on Non cooperative Game Theory Rui Qiao , Research Institute of Highway Ministry of Transport, China
16:40~16:50 CT513	Study on the Interactive Relationship between Rural Roads and Agricultural Economic Development Yiyan Zhou , Research Institute of Highway Ministry of Transport, China
16:50~17:00 CT546	The Research on Traffic Accident Prediction Based on Simulated Annealing Optimized BP Neural Network Algorithm XiangYu Lei , Wuhan University of Technology, China
17:00~17:10 CT597	Improved simulated annealing algorithm for time-dependent electric vehicle routing problem Haoting Meng , Liaoning Technical University, China
17:10~17:20 CT521	Impacts of System Accuracy and Environment Status on Human Trust in Intelligent Vehicles: A Simulated Driving Study with Eye-tracking Technique Meng Jiang , Shenzhen University, China
17:20~17:30 CT600	Research on cold chain logistics distribution path based on improved genetic algorithm Chuan Xia , Liaoning Technical University, China
17:30~17:40 CT576-A	Spatiotemporal differentiation and trend analysis of carbon emission efficiency in Chinese ports along the Belt and Road Initiative Yan Huang , School of business administration, Guangxi University, China

POSTER SESSION 2

SUNDAY, DECEMBER 29, 2024 <16:10~17:55>

<凯瑞之光壁画厅外, 1F>

Session Title: Application of Artificial Intelligence in Transportation and Power Systems

Chairperson: Assoc. Prof. Jiayan Yang, China Harbour Engineering Company Ltd., China

1 CT720	Dynamic Modeling of a Load-Sensing Hydraulic System By Bondgraphs Hu Quanyi , North China University of Water Resources and Electric Power, China
2 CT588	Collision Risk Assessment for Large LNG Ship Entering Port Junyang Xiao , Wuhan University of Technology, China
3 CT731	EV-EB Collaborative Distribution Network Recovery Strategy Nuoling Sun , Economic and Technology Institute State Grid Fujian Electric Power Co., Ltd. Fuzhou, China
4 CT589	Unmanned Surface Vessel Cluster Cooperative Replenishment Task Scheduling Strategy via GA-CFG Algorithm Zizhuo Wang , Wuhan University of Technology, China
5 CT535	Autonomous Navigation Algorithm for Underwater Vehicles in Channel Detection Yukun Dang , University of Shanghai for Science and Technology, China
6 CT564	Research on Train Positioning Calibration Technology Based on Multi-Sensor Fusion Xianglong Zheng , South-west Jiaotong University, China
7 CT570	Port Cluster Analysis and Feature Importance in the Guangdong-Hong Kong-Macao Greater Bay Area: An Integrated Machine Learning Approach WU Chengxi , National University of Singapore, Singapore
8 CT573	An LSTM-assisted 23-dimensional GNSS/INS tightly integrated system for train localization Jinxi Wu , Beijing Jiaotong University, China
9 CT581	YOLOv5-NCM for Noise Barrier Defect Detection Using UAV-Based Images in High-Speed Railway Xinlin Liu , Shenzhen University, China
10 CT582	Airport Visibility Forecasting Method Based on Deep Learning Using U-net Model Nana Wang , Qingdao Meteorological Bureau, China
11 CT5003	A Novel Single-Ship Image Deraining Method for Complex Natural Environments Zheng Fang , Wuhan University of Technology, China
12 CT549	Transformer-based Global Attention for Long-Range Rail Surface Defect Detection Yun Yang , Shenzhen University, China
13 CT724	Research on Dual Axis Synchronous Control System of Gantry EDM machine tool Boyan Zhang , North China University of Technology, China
14 CT726	A Brief Discussion on the Technology and Application Research of Robot Dogs Lujin JIA , Chenggong Zhai, Army Logistics Academy of PLA, China

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CT609

A Preliminary Analysis of the Integration of Chinese and Foreign Technical Standards in the Context of the Malaysia East Coast Rail Link Project
Jiayan Yang, China Harbour Engineering Company Ltd., China

ONLINE SESSION 1

MONDAY, DECEMBER 30, 2024 <9:30~11:00>

Room A: 884 6954 8520

Session Title: Urban Road Network Model and Public Transportation Construction

Chairperson: Assoc. Prof. Liang Huang, Wuhan University of Technology, China
Dr. Hongxun Huang, Wuhan Polytechnic University, China

9:30~9:40 CT5004	Research on integrated design of construction and maintenance of highway bridge in whole life Xuefeng Zhang , Research Institute of Highway Ministry of Transport, China
9:40~9:50 CT532	A deep reinforcement learning framework for integrated optimization of train scheduling, train control and passenger flow assignment Xinyi Ning , Tsinghua University, China
9:50~10:00 CT537	Research on Spatio-temporal Cascade Failure Model of Urban Road Network Shenghao Pan , School of Electronic and Control, Chang'an University, China
10:00~10:10 CT578	Research on traffic flow prediction based on the PLO-ICEEMDAN-KAN model Yiran Feng , Xi'an University of Posts and Telecommunications, China
10:10~10:20 CT596	Construction of an Electronic Chart Visualisation Platform Integrating NetCDF Information Xiong Hanluan , Wuhan University of Technology, China
10:20~10:30 CT520	Research on Spatial Distribution of Ship Encounters Based on Optimized Feature Extraction Algorithm and Integrated AIS Data Xianglong Chen , Dalian Maritime University, China
10:30~10:40 CT583	Research on green light compensation model based on bus priority strategy Yinzi Lai , North China University of Technology, China
10:40~10:50 CT632	Secure Sharing Scheme for Logistics Information Based on Alliance Blockchain and Attribute based Encryption Yu Tao , Xi'an University of Posts and Telecommunication, China
10:50~11:00 CT631	A Data-Driven Approach to Fuel Consumption Analysis of Logistics Vehicles in Beijing Qiuyi Zhang , Beijing University of Technology, China

ONLINE SESSION 2

MONDAY, DECEMBER 30, 2024 <9:30~11:00>

Room B: 843 9327 8045

Session Title: Modern Urban Logistics and Distribution

Chairperson: Assoc. Prof. Ren Cuiping, Xi'an University of Posts and Telecommunications, China

9:30~9:40 CT5001	Research on the Impact of Data Empowerment on Business Model Innovation in Cold Chain Logistics Enterprises Yanling Qi , Guangdong University of Science and Technology, China
9:40~9:50 CT514	Vulnerability assessment of road logistics and transportation network sections under seismic hazard Yue Gao , Xi'an University of Posts and Telecommunications, China
9:50~10:00 CT516	Simulation and Optimisation of Tobacco Logistics and Distribution Centre Based on Anylogic Qingsong Jiang , Modern Postal Academy, Xi'an University of Posts and Telecommunications, China
10:00~10:10 CT518	Coupling Analysis of Hazmat Road Transportation Accidents Using CN-FRAM Xiaofei Li , Xi'an University of Posts and Telecommunications, China
10:10~10:20 CT539	Risk Assessment of Highway Over-limit Cargo Transportation Based on FTA and FBN Wenmiao Ge , Xi'an University of Posts and Telecommunications, China
10:20~10:30 CT542	Evolutionary Game of Packaging Recycling by Logistic Companies under Carbon Trading Mechanism Xing Chen , Xi'an University of Posts & Telecommunications, China
10:30~10:40 CT607	Study on Location Selection and Route Optimization of Rural Express Distribution Center Yi Wang , College of Modern Posts, Xi'an University of Posts and Telecommunications, China
10:40~10:50 CT603	Research on benefit distribution of rural logistics joint collection and distribution alliance based on improved Shapely value method Xiaoyan Yu , Xi'an University of Posts and Telecommunications, China
10:50~11:00 CT561	Path Optimization of Multi-depot and Multi-vehicle Cold Chain Logistics Satisfaction Constraints Yingyin Yin , Xi'an University of Posts and Telecommunications, China

ONLINE SESSION 3

MONDAY, DECEMBER 30, 2024 <13:30~15:10>

Room A: 884 6954 8520

Session Title: Unmanned Control Systems and Intelligent Technologies

Chairperson: Prof. Li-Wen Chen, ChaoYang University of Technology, Taiwan, China

13:30~13:40 CT702	Design and application of mobile energy storage equipment for ships in the Three Gorges River section Li Zhiqi , Three Gorges Navigation Authority, China
13:40~13:50 CT526	Performance Evaluation of Manned and Unmanned Aircraft Operation in Integrated Airspace Jiachen Li , Nanjing University of Aeronautics and Astronautics, China
13:50~14:00 CT531-A	Adaptive Neural Network Control of Variable-mass Unmanned Surface Vehicles Zhaokun Yan , Shanghai Jiao Tong University, China
14:00~14:10 CT547	The impact of emotion on takeover performance in human-machine shared driving Jiayuan Wang , Shenzhen University, China
14:10~14:20 CT594	Application of Artificial Intelligence and Machine Learning in Autonomous Navigation for Drones Qifeng Li , Wuhan University of Technology, China
14:20~14:30 CT558	Research on the application of DMAIC model in smart car manufacturing in the context of industrial internet Liu Yang , Xi'an University of Posts and Telecommunications, China
14:30~14:40 CT701	Design of a coffee brush crusher for organic compost in the jungle of the Junin region of Peru Anghelo E. Alfaro-Ludeña , UNIVERSIDAD CONTINENTAL, PERÚ
14:40~14:50 CT719	Nonlinear Control of Quadrotor: Feedback Linearization and Sliding Mode Control Farouq Muhammad Aliyu , King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia
14:50~15:00 CT728	Research on Optimal Placement Of μ PMUs in Distribution Networks Based on State Estimation Accuracy Congzhi Ma , State Grid Tianjin Electric Power Company Economic and Technical Research Institute, China
15:00~15:10 CT633	Autonomous Vehicles Preference Study for Millennial Generation in Taiwan Li-Wen Chen , Chaoyang University of Technology, Taiwan, China

ONLINE SESSION 4

MONDAY, DECEMBER 30, 2024 <13:30~15:10>

Room B: 843 9327 8045

Session Title: Aircraft System Control and Intelligent Transportation Systems

Chairperson: Asst. Prof. Wenyu Jiang, Shenzhen University, China

13:30~13:40 CT523	Study on optimization requirements of ship crossing dispatching rules in three Gorges and Gezhouba reach Zhitao Feng , Three Gorges Navigation Authority, China
13:40~13:50 CT543	Dynamic Adjustment Control of Train Tracking Based on Reinforcement Learning with Event-driven and Attention Mechanisms Dongjing Wan , Southwest Jiaotong University, China
13:50~14:00 CT511	Research on bus OD prediction based on POI and passenger travel regularity Jie Jin Yang , Chongqing University of Posts and Telecommunications, China
14:00~14:10 CT548	Analysis of the Tripartite Stochastic Evolutionary Game in the Reverse Supply Chain of New Energy Vehicle Power Battery Ding-Ran Zhang , Xi'an University of Posts and Telecommunications, China
14:10~14:20 CT620	Anomaly Detection of Flight States in Commercial Jet Aircraft Based on Parameter Density Clustering Zhijun Meng , Beihang University, China
14:20~14:30 CT709	Unsteady aerodynamics analysis for low Reynolds number and high angles of attack Taiba Kouser , King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia
14:30~14:40 CT717	Power-Outage Scope Inference and Repair Crew Dispatch for Resilient Distribution Grids based on Source-Terminal Reliability Yunqi Yan , Tsinghua University, China
14:40~14:50 CT706	Experimental Study on Gear Materials Contact Fatigue Resistance of Seeker Coordinator Shuo Yang Yang , Xi'an University of Technology, China
14:50~15:00 CT729	Study on the Synergy of Photovoltaic, Energy Storage, and EV Charging Stations in Low Voltage Grids Congzhi Ma , State Grid Tianjin Electric Power Company Economic and Technical Research Institute, China
15:00~15:10 CT555	Optimizing Port Yard Storage at Dar es Salaam Port: A Hybrid Approach Combining Mixed-Integer Linear Programming and Genetic Algorithms MAJID MOHAMMED KUNAMBI , Dalian Maritime University, China

LIST OF DELEGATE

Hongyan He, Ningxia Institute of Technology, China

Rui Hui, Ningxia Institute of Technology, China

Zhenhang Wei, Tianjin University, China

