

## **IEEE ITSC 2022**

### **Parallel Intelligence and Metaverses (PIM) Workshop Newsletter**

On September 18, the Kick-off event of the 25th IEEE International Conference on Intelligent Transportation Systems (IEEE ITSC 2022), "IEEE/CAA Workshop on Parallel Intelligence and Metaverses (IEEE PIM 2022)", is launched at the Plato Hall, The Alfred N. Whitehead College in Beijing, China. The IEEE/CAA PIM 2022 is an international forum held within the IEEE ITSC 2022, which is organized in a distributed-hybrid fashion for all authors, presenters and registrants, online and offline. The Kick-off is planned and organized by Prof. Xiao Wang of Anhui University, a member of IEEE ITSS BoG.

The IEEE/CAA PIM 2022 brings together scientists, engineers, and researchers from both academic and industrial institutes to exchange their latest work, research, advance in the state of the art as well as to identify the emerging topics and open issues in the field of Parallel Intelligence and Metaverses.

The workshop is co-chaired by Prof. Fei-Yue Wang, director of the State Key Laboratory of Complex System Management and Control, Chinese Academy of Sciences, and Prof. Linyuan Lv, University of Electronic Science and Technology. Prof. Wang opened the workshop with his address titled: "Welcome to PMI: The DAO to Transportation Intelligence in CPSS".

Professor Markos Papageorgiou of Technical University of Crete Ningbo University in Greece and Dr. Zhihan Lv of Uppsala University in Sweden presented their keynote speeches at IEEE/CAA PIM 2022, their respective presentations are titled: "A New Traffic Paradigm in the Era of Connected Automated Vehicles" and "The Past and Present of the Metaverse".

Dr. Fenghua Zhu of Institute of Automation of the Chinese Academy of Sciences and Prof. Xiaoming Liu of North China University of Technology organized the second event of the first day, a workshop on Artificial Transportation Systems and Simulation (ATSS). The aim of the ATSS is to foster the discussion on issues concerning the development of Artificial Transportation Systems and Simulation, especially digital twins, as a means to devise, test and validate ITS-based technologies.

This DHC (Distributed Hybrid Conference) form of IEEE ITSC 2022 will last from September 18 to October 7, starting at Beijing and ending at Macau. During this period, a total of 145 DHC sessions will be held in an orderly manner.

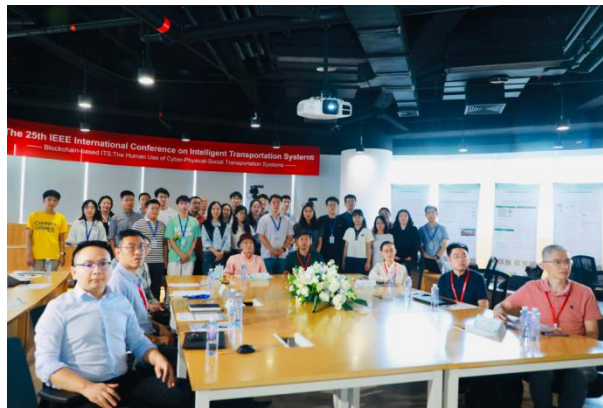
With the theme of "Blockchain-based ITS: The Human Use of Cyber-Physical-Social Transportation Systems", the IEEE ITSC 2022 has received over 1,000 articles and presentations in the areas of intelligent transportation systems and automated driving, will demonstrate to the world recent ITS advances and developments in theory, modeling, simulation, testing, case studies, as well as large-scale deployment.



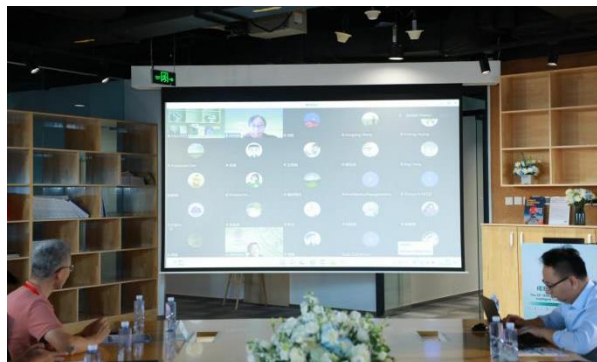
PIM Chair - Professor Fei-Yue Wang



ATSS Chair - Professor Fenghua Zhu



PIM - Offline Conference in Beijing, CHINA



Online presenters and Q&A



Screenshot of online keynotes



Poster Space



Registration Area

Meantime, Qingdao Metaverse Monitoring Center has been setup for providing real-time data monitoring and technical insurance support for this one-month series of worldwide distributed hybrid conference. Additionally, two offline brand venues have setup and begin to operate, based in Macau and Beijing. From September 18 to October 7, 145 distributed hybrid conferences will be organized in an orderly manner. Qingdao Metaverse Monitoring Center will give a strong support for this DHC in the next month period.



ONE-Metaverse-Center, TWO-Branch-Venue

This year, the distributed hybrid conference covers almost all frontier research and hot topics in the field of intelligent transportation. The agenda of the conference is announced as follows:

**IEEE ITSC 2022**  
**The 25<sup>th</sup> IEEE International Conference on Intelligent Transportation Systems**  
IEEE International ITS Day, Human-Data-Cyber-Physical-Social Transportation Systems

**Schedule**

Date	Time	Title
Sep 18	14:25-15:30	Parallel Intelligence and Materials
Sep 18	17:05-18:30	AutHoc: Transportation Systems and Simulation (ATSS)
Sep 18	18:00-19:30	Task-based Connected Sensing, Planning and Control of Connected and Automated Vehicles
Sep 19	09:30-11:00	Smart Mobility for a Sustainable Transport Future
Sep 19	11:30-12:00	Control of Connected and Automated Vehicles in Low-See Environments
Sep 19	17:05-18:30	Active Safety Control for Autonomous Trucks
Sep 19	20:00-21:30	Control, Communication and Emerging Technologies in Smart Rail Systems
Sep 20	08:30-10:00	Transportation II and Parallel Transportation
Sep 20	10:30-12:30	CPS based Traffic Control
Sep 20	14:00-16:00	CPS based Complex City Systems
Sep 20	17:05-18:30	Coast Neural Networks for Traffic Forecasting
Sep 20	18:30-20:00	Visual Coupling: A Novel Concept in Railway I
Sep 20	20:00-21:30	Visual Coupling: A Novel Concept in Railway II
Sep 21	11:00-12:30	Trajectory Prediction and Decision Making for Autonomous Vehicles
Sep 21	17:05-18:30	AutHoc Intelligence for Traffic Signal Control, Optimization and Scheduling Problems
Sep 21	20:00-22:00	Systems Engineering for ITS
Sep 22	08:00-09:30	Collaborative Control and Management of EV Fleets based on Intelligent Transport Systems
Sep 22	09:30-11:00	Advanced control technology for connected and/or automated vehicles
Sep 22	11:00-12:30	Autonomous Transportation System
Sep 22	14:00-15:30	Connected Vehicles and Cyber-Physical Transportation Systems
Sep 22	15:30-17:00	Parallel Vision for Intelligent Vehicle
Sep 22	17:00-18:30	Intelligent Freeway Planning for CAVs
Sep 22	18:30-20:00	Towards sustainable traffic via trajectory optimization and control strategies for Connected and Automated vehicles
Sep 23	08:30-09:00	ITSC II Opening
Sep 23	09:00-09:30	Vehicles in Complex Driving Conditions
Sep 23	09:30-11:00	2nd Special Session on Cooperative Driving in Mixed Traffic I
Sep 23	11:00-12:30	2nd Special Session on Cooperative Driving in Mixed Traffic II
Sep 23	15:30-17:30	BlockChain & Knowledge Automation
Sep 23	18:30-19:00	AI Empowered Intelligent Solutions for CAV Impacts: From Individual Vehicle Control to Networked System Management
Sep 23	19:00-21:00	Emerging Data-driven Technologies and Machine Learning for Traffic Prediction & Estimation
Sep 24	09:30-11:00	Traffic Simulation under Vehicle Road Cooperation
Sep 24	11:00-12:30	New Technology and Development in Autonomous Train Control
Sep 24	17:00-18:30	Intelligence Traffic Management for Mainline and High Speed Railways
Sep 24	08:00-09:30	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-1
Sep 24	09:30-11:00	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-2
Sep 24	11:00-12:30	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-3
Sep 24	14:00-16:00	IEEE Workshop (2022)
Sep 25	08:30-09:00	Multi-autonomous Vehicle Studies, Models, Techniques and Simulations-1
Sep 25	09:00-09:30	Multi-autonomous Vehicle Studies, Models, Techniques and Simulations-2
Sep 25	10:00-11:00	Sensing, Vision, and Perception-1
Sep 25	09:00-09:30	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-4
Sep 25	09:30-11:00	Sensing, Vision, and Perception-2
Sep 25	11:00-12:30	Sensing, Vision, and Perception-3
Sep 25	14:00-15:30	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-5
Sep 25	15:30-17:00	Multi-autonomous Vehicle Studies, Models, Techniques and Simulations-3
Sep 25	17:00-18:30	Multi-autonomous Vehicle Studies, Models, Techniques and Simulations-4
Sep 25	18:30-20:00	Sensing, Vision, and Perception-4
Sep 25	20:00-21:30	Sensing, Vision, and Perception-5
Sep 25	21:30-23:00	Sensing, Vision, and Perception-6
Sep 26	08:00-09:30	Sensing, Vision, and Perception-7
Sep 26	09:00-11:00	Sensing, Vision, and Perception-8
Sep 26	11:00-12:30	Sensing, Vision, and Perception-9
Sep 27	14:00-18:30	ITSC Workshop
Sep 27	18:30-20:00	Advanced Vehicle Safety Systems-1
Sep 27	20:00-21:30	Advanced Vehicle Safety Systems-2
Sep 27	21:30-23:00	Advanced Vehicle Safety Systems-3
Sep 28	08:00-09:30	Communications and Protocols in ITS-1
Sep 28	09:30-11:00	Communications and Protocols in ITS-2
Sep 28	11:00-12:30	Data Mining and Data Analysis, Off-line and Online Data Processing Techniques -1
Sep 28	14:00-15:30	Advanced Vehicle Safety Systems-4
Sep 28	15:30-17:00	Advanced Vehicle Safety Systems-5
Sep 28	17:00-18:30	Data Mining and Data Analysis, Off-line and Online Data Processing Techniques -2
Sep 28	18:30-20:00	Communications and Protocols in ITS-3
Sep 28	20:00-21:30	Data Mining and Data Analysis, Off-line and Online Data Processing Techniques -3
Sep 28	21:30-23:00	Data Mining and Data Analysis, Off-line and Online Data Processing Techniques -4
Sep 29	08:00-09:30	ITSC Banquet
Sep 29	14:00-15:30	Data Mining and Data Analysis, Off-line and Online Data Processing Techniques -5
Sep 29	15:30-17:00	Data Mining and Data Analysis, Off-line and Online Data Processing Techniques -6
Sep 29	17:00-18:30	Intelligent Logistics-1
Sep 29	18:30-20:00	Electric Vehicles-1
Sep 29	20:00-21:30	Electric Vehicles-2
Sep 29	21:30-23:00	Incident Management-1
Sep 30	08:00-09:30	Data Mining and Data Analysis, Off-line and Online Data Processing Techniques -7
Sep 30	09:30-11:00	Data Mining and Data Analysis, Off-line and Online Data Processing Techniques -8
Sep 30	11:00-12:30	Data Mining and Data Analysis, Off-line and Online Data Processing Techniques -9
Oct 1	14:00-18:30	ITSC Workshop
Oct 1	08:00-09:30	Rail Traffic Management-1
Oct 1	09:30-11:00	Rail Traffic Management-2
Oct 1	11:00-12:30	Traffic Theory for ITS-1
Oct 1	14:00-15:30	ITS Field Tests and Implementation, Cooperative Techniques and Systems-1
Oct 1	16:00-17:00	Public Transportation Management: Theory and Models for Optimization and Control: Aerial, Marine and Surface Intelligent Vehicles-1
Oct 1	17:00-18:30	Traffic Theory for ITS-2
Oct 1	18:30-20:00	ITS Field Tests and Implementation, Cooperative Techniques and Systems-2
Oct 1	20:00-21:30	Public Transportation Management: Theory and Models for Optimization and Control: Aerial, Marine and Surface Intelligent Vehicles-2
Oct 1	21:30-23:00	Traffic Theory for ITS-3
Oct 2	08:00-09:30	Traffic Theory for ITS-4
Oct 2	09:30-11:00	Simulation and Modeling-1
Oct 2	11:00-12:30	Task Information: Theory and Models for Optimization and Control-1
Oct 2	14:00-15:30	Road Traffic Control-1
Oct 2	15:30-17:00	Transportation Security, Network Management, Network Modeling-1
Oct 2	17:00-18:30	Sensing, Vision, and Perception-7
Oct 2	18:30-20:00	Road Traffic Control-2
Oct 2	20:00-21:30	Transportation Security, Network Management, Network Modeling-2
Oct 2	21:30-23:00	Transportation Security, Network Management, Network Modeling-3
Oct 3	08:00-09:30	Travel Information: Theory and Models for Optimization and Control-2
Oct 3	09:30-11:00	Air Traffic Management-1
Oct 3	11:00-12:30	Road Traffic Control-3
Oct 3	14:00-15:30	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-7
Oct 3	15:30-17:00	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-8
Oct 3	17:00-18:30	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-9
Oct 3	18:30-20:00	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-10
Oct 3	20:00-21:30	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-11
Oct 3	08:00-09:30	Transportation Security, Network Management, Network Modeling-4
Oct 7	9:30-11:00	Travel Behavior Under ITS-1
Oct 7	11:00-12:30	Risk Mitigation and Resilience, Travel Information, Travel Guidance, and Travel Demand Management-1
Oct 7	14:00-15:30	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-12
Oct 7	15:30-17:00	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-13
Oct 7	17:00-18:30	Driver Assistance Systems, Automated Vehicle Operation, Motion Planning, Navigation-14
Oct 7	18:30-20:00	Multi-autonomous Vehicle Studies, Models, Techniques and Simulations
Oct 7	20:00-21:30	Multi-autonomous Vehicle Studies, Models, Techniques and Simulations
Oct 7	21:30-23:00	Sensing, Vision, and Perception

Visit our conference website for more information: <https://www.ieee-itsc2022.org/#/>.

Online broadcast: <https://www.ieee-itsc2022.org/#/attend/sessionlist>.

Conference Introduction:

### Blockchain-based ITS: The Human Use of Cyber-Physical-Social Transportation Systems

The 25th IEEE International Conference on Intelligent Transportation Systems (IEEE ITSC 2022) is the annual flagship conference sponsored by the IEEE Intelligent Transportation Systems Society. From 1997 to 2021, it has been held 24 times, covering 24 cities in 12 countries in Asia, Europe, North America, South America and Oceania. The main conference of the 25th IEEE ITSC 2022 will be held in Macau, China. IEEE ITSC 2022 welcomes articles and presentations in the areas of intelligent transportation systems and automated driving, conveying new advances and developments in theory, modeling, simulation, testing, case studies, as well as large-scale deployment. The conference particularly invites and encourages prospective authors to share their recent research work, findings, perspectives, and developments related to advanced blockchain-based intelligent transportation systems.