

The 22nd IEEE International Conference on
Industrial Informatics
August 17-20, 2024, Beijing, China

Industry Forum
August 18, 2024

IEEE INDIN 2024 will host two Industry Forum sessions during the conference, addressing the general themes in autonomous vehicles, manufacturing and infrastructure. ***A unique feature of this forum is many of the presentations will have live demonstrations.***

The Industry Forum is an IES program for Industry to engage with research in a productive manner. Industry speakers are invited to discuss industry, technology directions, and, most importantly, challenges for the companies. These presentations inform the attendees on the vision and application of technologies in business and what challenges companies are encountering. The forum also offers the opportunity for researchers to study these challenges and know the contact in the companies should they have a solution that the company might utilize. We want all conference attendees to engage in the Industry Forum and listen to the presentations of our industry speakers so all communities can benefit.

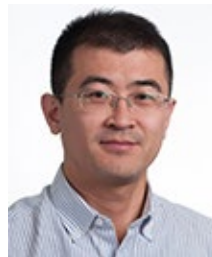
Organizers



Victor Huang
Onlye Solutions
IEEE Life Fellow



Yebin Wang
Sr Principal
Research Scientist
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Zhibo Pang
ABB Corporate
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Michael Condry
ClinicAI
IEEE Life Fellow

Guizhen Yu
Professor
Beihang University

Yixin Dai
Associate Professor
Tsinghua University

Session 1 Industrial Electronics in Robotics & Vehicles

1:30 – 2:30 pm, Sunday, August 18, 2024

Chair: Dr. Zhibo Pang, ABB

Speakers



Zhongxia Xiong
CTO
Beijing Robint
Technology Co.
Ltd.



Frank Ding
Vice President
Rosenberger Asia
Pacific Electronic
Co. Ltd.



Shengran Xiao
Director Beijing
Automotive
Research Institute
Co. Ltd.

Talks

1:30 – 1:50 pm

Talk 1: *Smart Elderly Care Solution with 'Robotics + Cloud'*

Mr. Zhongxia Xiong, CTO

Beijing Robint Technology Co., Ltd.

Abstract: Robint Co., Ltd. is a high-tech innovative company focused on the research, design, production, and sales of artificial intelligence. Leveraging a robust team of PhD and Master's degree researchers from renowned domestic and international universities, and collaborating with top industry distributors and substantial capital support, LoTech aims to bring artificial intelligence into thousands of households through service robots.

Our development of high-intelligence home+health+auxiliary service robots marks a significant start in applying AI+robot technology to smart homes, family health, and smart elderly care.

Adhering to our core philosophy of "AI for People," Robint leads in exploring, innovating, and efficiently applying artificial intelligence and robotics. Through intelligent and service robots as mediums, we aim to serve households extensively, achieving the broadest possible benefits of AI+robot technology for the public and ultimately benefiting humanity.

Bio: Zhongxia Xiong is working as the CTO of Beijing Robint Technology Co.Ltd. He is primarily responsible for product requirement gathering, R&D, interdepartmental coordination, and external communications for the company. Dr. Xiong is also serving as an Assistant Professor at the School of Transportation Science and Engineering, Beihang University. Before that, he received his Ph.D. degree in Transportation Engineering from Beihang University in 2023. His research focuses cooperative perception for automotive driving and indoor robots.

1:50 – 2:10 pm

Talk 2: *The Importance of Rosenberg in-vehicle high-speed link for Intelligent and Connected Vehicles*

Mr. Frank Ding, Vice President,

Rosenberger Asia Pacific Electronics Company, Ltd.

Abstract: With the rapid development of vehicle intelligence and connectivity in China, various parties have extensively discussed autonomous driving, intelligent assistance, and related systems and subsystems. However, among the numerous analyses and discussions, there is rarely any mention of the high-speed communication links, which are crucial carriers of signals within the intelligent and connected vehicles. This presentation will delve into the role of "signal carriers" from the perspective of high-speed data links in a clear and accessible manner. It will also discuss the potential hazards to subsystems and the entire vehicle system if these carriers encounter issues, along with proposed countermeasures.

Bio: Lei Ding has been dedicated to the telecommunications and automotive industries for over twenty years, possessing a profound understanding of the Chinese automotive market. He has built and led sales and R&D teams for automotive products, pioneering the local market in China and significantly contributing to the rapid growth of Rosenberger's Automotive Electronics Division. He has extensive technical and management experience in related fields such as RF and data connectors/cable assemblies. Lei Ding has unique insights into Industry 4.0, the electrification of new energy vehicles, intelligent connectivity, RF/data transmission, and the current status and future prospects of the automotive cable industry.

2:10 – 2:30 pm

Talk 3: *High-Safety Intelligent Charging Solutions for Electric Vehicles in All Scenarios*

**Ms. Shengran Xiao, Director, Beijing Automotive Research
Institute Co., Ltd.**

Abstract: As electric vehicles (EVs) rapidly increase in popularity, the demand for fast, intelligent and safe charging solutions has become more critical than ever. This presentation will begin with an overview of the current rapid growth in the electric vehicle market. It will then analyze public charging environments and user charging behaviors, providing insights into the challenges and opportunities in this sector. A detailed examination of Beijing Automotive's high-voltage super charging technology will highlight its current state and advancements. Finally, the presentation will explore the future charging needs of electric vehicles, emphasizing the importance of developing comprehensive high-safety intelligent charging solutions to meet these demands.

Bio: Ms. Shengran Xiao is the Director of the Charging Development Department at Beijing Automotive Research Institute Co., Ltd. Shengran Xiao has over 15 years of in-depth experience in the field of electric vehicle power systems. She has led the development of multiple technologies and products, including high-voltage ultra-fast charging, wireless charging, bidirectional onboard chargers, ultra-fast charging stations, intelligent home charging stations, and charging apps. Shengran Xiao has led her team in drafting the national standard "GB/T 40432 Conductive Onboard Charger for Electric Vehicles" and has participated in drafting over a dozen national standards related to electric vehicle charging, such as "GB/T 18487 Conductive Charging System for Electric Vehicles" and "GB/T 38775 Wireless Charging System for Electric Vehicles". She has been honored with the China Patent Excellence Award and the Beijing Science and Technology Progress Award, among other accolades.

Session 2 Industrial Electronics in Mining and Marine Industries

2:30 – 3:30 pm, Sunday, August 18, 2024

Chair: Dr. Yebin Wang, Mitsubishi Electric Research Labs

Speakers



Mr. Haijie Wu
Vice President
The Tage Idriver
Company



Mr. Cheng Huang
Vice President
Sealien Robotics
Co. Ltd.



Mr. Jinxian Liang
General Manager
Shenzhen Cynovan
Technology Co. Ltd.

Talks

2:30 – 2:50 pm

Talk 1: *Open-Pit Mining Autonomous Haulage System Implementation in China*

Mr. Haijie Wu, Vice President

The Tage Idriver Company

Abstract: The autonomous transportation system in mining areas serves as a pivotal infrastructure in the construction of smart mines, integrating cutting-edge technologies such as advanced Internet of Things (IoT), big data, artificial intelligence, and high-precision positioning. This system is propelling the mining industry towards a highly efficient, green, and sustainable development path, thereby emerging as a crucial link in implementing the strategy of building a

powerful mining nation. Therefore, intensifying research and development investments in areas like autonomous driving technology, intelligent scheduling algorithms, and remote operation and maintenance platforms, as well as establishing a comprehensive industrial ecosystem and diverse application scenarios, holds significant strategic value and practical relevance for advancing the transformation and upgrading of China's mining industry. Firstly, this presentation defines the concept and connotation of the autonomous transportation system in mining areas, summarizing its developmental significance and strategic requirements. Secondly, it provides a detailed overview of the domestic and international development status of this system. Then, the core technologies of the autonomous transportation system in mining areas are systematically reviewed from four aspects: system design, hardware platform, key technical support, and application scenarios. Finally, it summarizes the challenges existing in the practical application of China's autonomous transportation system in mining areas and constructively offers suggestions for future development.

Bio: Mr. Haijie Wu is currently the vice president of the Tage Idriver Company. He obtained his master degree from control theory and control engineering of Zhejiang University, engaged in more than 20 years of experience in 2B commercial software development and open-pit mining autonomous transportation system development.

2:50 – 3:10 pm

Talk 2: *The Development and Application Practice of the Largest Seabed Cable and Pipeline Burying Tractor in Asia*

**Mr. Cheng Huang, Vice President
Sealien Robotics Co. Ltd.**

Abstract: The presentation will introduce Sealien Robotics, a leading company in marine engineering technology. It will cover the company's product lines, including trenchers, remotely operated vehicles (ROVs), and service robots for platforms and wind farms. The research directions and backgrounds of the core team members will also be highlighted. Detailed information about Sealien's products will be provided, focusing on the advanced capabilities of the "Taurus" Trencher and its impressive project track record in various challenging marine environments. This comprehensive overview aims to showcase Sealien Robotics' innovative solutions and expertise in marine engineering.

Bio: Cheng Huang graduated from Harbin Engineering University with a major in Ship Building and Ocean Engineering. He began his career at Wison Offshore and Marine Company (2013-2015), focusing on the design of oil & gas modules, offshore platforms, and FLNG ships. From 2015 to 2024, he worked at Hilong Marine Engineering Ltd as a Project Manager and Director of the Project Management Department, managing large-scale projects including submarine pipelines and offshore wind installations across China, Thailand, Bangladesh, and Myanmar. Since July 2024, he has been the Deputy General Manager and Marketing Director of Sealien (Guangzhou) Technology Ltd., and the General Manager of its subsidiary, Sealien (Guangzhou) Marine Engineering Ltd.

3:10 – 3:30 pm

Talk 3: *A Low-Code Approach for Industrial Automation and Information*

**Mr. Jinxian Liang, General Manager
Shenzhen Cynovan Technologies Co. Ltd.**

Abstract: The intelligent transformation of the manufacturing industry is faced with numerous critical challenges that impede the efficiency and profitability of smart manufacturing projects. The complexity of automated production lines, particularly in the aspect of logic construction, information exchange, and resource sharing among multiple workstation nodes, presents significant obstacles. Furthermore, the scarcity of control system software engineers and the knowledge gap between them and process engineers result in excessive demands and over-reliance on software engineers. The integration of automation and informatization in smart manufacturing projects is also a prominent issue, leading to prolonged delivery cycles, high development costs, low efficiency, and increased post-sale maintenance expenses, thereby diminishing profit margins.

Bio: Jinxian Liang received the bachelor's degree from School of Mathematics and Computational Science of the Sun Yat-sen University, Guangzhou, China in 2009 and obtained the title of Senior Engineer certified by MOHRSS in 2019. He is currently the co-founder and general manager of Shenzhen Cynovan Technologies Co. Ltd., Shenzhen, China. His current research interests include model-driven engineering for industrial cyber-physical systems, Low-code approach and implementation in automation and control systems, industrial information systems and the industrial internet of things.

INDUSTRY FORUM DEMOS

LOCATION

Wyndham Beijing North Hotel

TIME

Sunday, August 18, 2024, 10 AM – 5 PM

Monday, August 19, 2024, 10 AM – 5 PM

DEMOS BY

Beijing Robint Technology Co. Ltd.

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