



28 AUGUST 2024

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SMX

AUTOMOTIVE SMART MANUFACTURINGX SUMMIT USA 2024

ENHANCING MANUFACTURING PROCESS AND PERFORMANCE THROUGH DIGITAL INNOVATION



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SUSTAINABILITY GOALS



INCREASE CAPACITY



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NORTH AMERICA'S PREMIER GATHERING OF SMART MANUFACTURING LEADERS, INNOVATORS AND EXPERTS

Take part in this industry leading event where SMART & 4.0 leaders representing global OEMs, Tier1's and key solution providers, explore future factory trends, innovations and disruptive technologies shaping the future of vehicle manufacturing.

Automotive Smart ManufacturingX USA

Automotive Smart Manufacturing 4.0 USA empowers automotive manufacturers with the tools and connections needed to future-proof their businesses. Discover cutting-edge technologies and innovative processes that reduce downtime, provide powerful operational insights, and boost productivity. Gain a competitive edge and ensure your manufacturing operations thrive in an evolving digitally intelligent landscape.

Expert Lead Technical Conference Agenda

The global manufacturing landscape is undergoing rapid transformation, and the industry needs insight and ingenuity to respond. With an interactive technology showcase, thought-provoking presentations, and strategic networking sessions, the Automotive Smart Manufacturing 4.0 USA Summit empowers manufacturing leaders to navigate this evolution and drive long-term growth.

Technology Showcase 4.0

Discover the future of SMART manufacturing by immersing yourself in our 4.0 Technology Showcase. Automotive Smart Manufacturing 4.0 USA provides an opportunity to engage with companies, experts and technologies on our exhibition floor that are leading the smart revolution. Discuss your challenges and find practical takeaway contacts and solutions that work for you.

Elevate Your Manufacturing Advantage

Don't miss your chance to meet leading experts in smart manufacturing. Our thoughtfully curated line-up brings together some of the most renowned names in the industry for inspiring keynote presentations. These sessions will delve into the latest challenges, real-world business cases, and opportunities for further integrating smart technologies into your operations.

DIGITALIZING THE END-TO-END AUTOMOTIVE VALUE CHAIN

Accelerating Operations Optimization: Navigating Digital Transformation In The Automotive Manufacturing Industry

WeAutomotive Group produce and organize some of the automotive industries leading conferences, summits, and exhibitions. What makes our events unique is the dedicated OEM support and participation, attracting groups of attendees from all the majors and innovative start-ups from across the world.

Our programs are diligently researched and curated in partnership with the OEMs to ensure they address the most pertinent current challenges and key investment areas. This level of detail is part of our pioneering approach to content and ensures that we attract the highest level of attendees.

Automotive SMX USA 2024, delivers an unparalleled technical-conference agenda and networking engagement – in a welcoming, personable environment.

The automotive industry is undergoing massive transformation. It's pervasive across the industry and much of it is being driven by Industry 4.0 and the continued digitalization of the entire value chain. Industry 4.0 has both expanded the possibilities of digital transformation in automotive manufacturing and increased its importance to OEMs, suppliers, dealers, captive finance organisations and everyone involved in the mobility ecosystem.

By harnessing the power of combined and connected digital and physical technologies – artificial intelligence, the Internet of Things, additive manufacturing, robotics, cloud computing, and others – companies throughout the value chain are becoming more flexible, efficient, and responsive and reshaping how they operate their businesses, engage customers, and deliver products and services.

The Automotive SMX USA Summit explores multiple facets of Industry 4.0, examining the impact, opportunities, and potential pitfalls manufacturers could encounter as they digitally transform their enterprises. Whether building a cognitive digital supply network, digitalizing product management, developing industry 4.0 capabilities through collaborations with startups or scaling up anything as-a-service, the connections and opportunities available at the Automotive Smart Manufacturing 4.0 Summit USA have helped inform executives leading digital transformation.

To help automotive executives navigate these exciting and transformative times, **WeAutomotive Group** has collaborated with the North American OEM community, big and small, to delve into how Industry 4.0 is changing automotive manufacturing and demonstrate how some enterprises are using these technologies to speed design and manufacturing, improve quality, and enhance how they protect their enterprises, products, business partners and customers.

You are invited to join us and over 400 automotive engineers involved in the design and implementation of digital production solutions and production data management, at North America's largest technical conference and exhibition for automotive smart manufacturing professionals – where experts will engage during a series of case study presentations, interactive panels, and unparalleled networking opportunities.

We hope to see you there.

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CONFERENCE TOPICS

Next-Gen Cloud Architecture

In today's rapidly evolving digital landscape, cloud architecture forms the foundation for scalable, flexible, and cost-effective IT infrastructure. Businesses are exploring advanced cloud technologies to optimize resource utilization, enhance data security, and facilitate seamless integration across diverse platforms and services. This topic delves into innovative approaches and best practices for designing and implementing cloud architectures that can meet the demands of modern enterprise environments.

Sustainability In Manufacturing Operations

As environmental concerns continue to escalate, the manufacturing sector faces increasing pressure to adopt sustainable practices. This conference topic addresses strategies for minimizing environmental impact, reducing energy consumption, and optimizing resource utilization throughout the manufacturing lifecycle. From eco-friendly production processes to sustainable supply chain management, attendees will explore practical solutions to align manufacturing operations with broader sustainability objectives.

AI Within Automated Inspection Systems

Automated inspection systems powered by Artificial Intelligence (AI) are revolutionizing quality control processes in manufacturing. This conference topic examines the integration of AI algorithms, computer vision, and machine learning techniques into automated inspection systems. Attendees will explore how AI-driven inspection systems can detect defects, ensure product quality, and optimize production processes with unparalleled accuracy and efficiency.

Digitizing And Modernizing Operational Tech

Digitizing and modernizing operational technology (ot) infrastructure is essential for enhancing operational efficiency, agility, and competitiveness in the manufacturing sector. This conference topic focuses on strategies for leveraging digital technologies, such as industrial internet of things (iiot), edge computing, and advanced analytics, to modernize ot systems. Attendees will learn how digitization initiatives can optimize asset performance, improve predictive maintenance, and enable real-time monitoring and control of industrial processes.

Standardizing And Structuring Data And Processes

In the era of big data, standardizing and structuring data and processes are crucial for unlocking valuable insights and driving informed decision-making. This conference topic delves into methodologies and tools for establishing standardized data formats, implementing efficient data management protocols, and streamlining business processes across diverse functional areas. By standardizing data and processes, organizations can enhance data integrity, facilitate interoperability, and improve overall operational efficiency.

3D Modelling And Computational Analysis On Battery Recycling

3d modeling and computational analysis play a pivotal role in product design, simulation, and optimization across industries. This conference topic explores cutting-edge techniques and tools for creating realistic 3d models, conducting virtual simulations, and performing computational analysis to validate designs and optimize performance. From finite element analysis to computational fluid dynamics, attendees will delve into the transformative potential of 3d modeling and computational analysis in accelerating product development cycles and improving product quality.

The Emerging Role Of Artificial Intelligence

Artificial intelligence (ai) is revolutionizing various aspects of manufacturing, from predictive maintenance to quality control and supply chain optimization. This conference topic delves into the latest advancements in ai technologies and their applications in manufacturing environments. Attendees will gain insights into how ai-driven algorithms, machine learning models, and predictive analytics can enhance productivity, efficiency, and decision-making in today's smart factories.

Cloud-Based PLM, MES, And ERP

Product lifecycle management (plm), manufacturing execution systems (mes), and enterprise resource planning (erp) systems are essential components of modern manufacturing ecosystems. By leveraging cloud-based solutions, organizations can realize numerous benefits, including enhanced accessibility, scalability, and collaboration capabilities. This conference topic explores the potential of cloud-based plm, mes, and erp platforms to streamline operations, improve agility, and drive innovation across the manufacturing value chain.

Cybersecurity In Smart Manufacturing

As smart manufacturing systems become increasingly interconnected and digitized, cybersecurity emerges as a critical concern for safeguarding sensitive data, intellectual property, and operational continuity. This conference topic delves into the evolving threat landscape facing smart factories and explores proactive strategies for mitigating cyber risks. From identifying vulnerabilities in industrial control systems to implementing robust security protocols and incident response plans, attendees will gain insights into safeguarding manufacturing environments against cyber threats. By prioritizing cybersecurity, organizations can instill confidence in their digital infrastructure, protect against potential disruptions, and uphold the integrity of their operations in an interconnected world.



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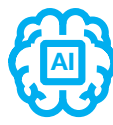
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Join Our 2024 Speaker Faculty



Konstantin Popov
VP, Enterprise Technology &
Financial Management
| [cprime](#)



Dr. Jeremy Frank
CEO
| [KCF Technologies](#)



Aaron K. Dunlap
ME Tech Fellow Manufacturing
Execution Systems-Architect ME
Vehicle Systems
| [General Motors](#)



Miguel Saez
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Brian Breuhan
Global Manufacturing
Optimization Strategist
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Rajeev Kalamdani
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Mike Bastian
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Aaron Alberts
Vice President -
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| [Acerta](#)



Ashish Saxena
President
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Patrick Tew
Enterprise Sales Manager
| [MakinaRocks](#)



Vikram Mankar
Principal Product
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Aleksandar Boskovic
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Matt Myrand
Manufacturing Innovation
Director
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George Geros
Commercial Director
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Edward Lesnau
Director, Industry Digital
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Gerry Abbey
Director of Product
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| [Copia Automation](#)



Madhu Rao
Senior Engineer - Chassis
Engineering
| [Lucid](#)



Manbir Singh
Digital Transformation Leader
- Automotive
| [Kyndryl](#)



Sharath Prasad
AVP and Head of Smart
Manufacturing Solutions
| [Cognizant](#)



Rick Homman
Director of Presales,
FORCAM US
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Fernando Bera
Engineering Supervisor
| [ZF Group](#)



Michael Flynn
Data Science, Analytics, &
Product Management
| [Rivian](#)



Michael Bradford
DELMIA Strategic Business
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John Rinaldi
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Mike Nager
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Steve Winski
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Jonathan Wise
Vice President Technology
| [CESMII](#)



Brian McIntyre
DMS Controls Software
Development
| [Ford](#)



Balaji Srinivasan
Automotive Sector Head
| [DXC Americas](#)



07:30

Morning Registration

08:00 CHAIRMAN'S WELCOME

Strengthening the USA Competitiveness Through Smart Manufacturing

Steve Winski, Business Development VP, CESMII

- Manufacturing productivity – for the first time in recorded history, has been declining. The 4th Industrial Revolution was supposed to herald a transformation, but it has not yet materialized
- Evolution from proprietary, closed ecosystems, enabling interoperability based on standards that eliminate data silos, stovepipe architectures to enable significant reduction in complexity and cost
- Aligning education, workforce development and continuous improvement strategies to create data driven cultures
- Smart Manufacturing Executive Council formed to engage business and technology executives, thought leaders and US Policy Makers advocating for the strengthening of the U.S. manufacturing ecosystem

08:20 OEM PRESENTATION

Transitioning GM To A Smart Manufacturing Environment

Aaron K. Dunlap, ME Tech Fellow, Manufacturing Execution Systems-Architect ME Vehicle Systems, General Motors

Technical Challenges in Smart Manufacturing

- Address diverse data sources and misalignment in data definitions
- How to develop strategies for managing and storing the increasing volume of data
- Balancing enhanced cybersecurity measures with uninterrupted manufacturing
- How to overcome communication disruptions due to cybersecurity protocols
- Ensuring focused and beneficial AI implementations
- Leverage AI in robotics and vision systems for improved efficiency
- Debating the scope of digital twins: entire plant vs. critical areas
- Assess time and financial investments for digital twin development

Opportunities for Vendor Collaboration

- Identifying vendor solutions to address GM's specific challenges
- Developing tailored strategies to enhance smart manufacturing capabilities

Aligning Strategies with Industry Trends

- Examining GM's current uses of AI, MES, and other technologies
- Learn from industry best practices and avoid common pitfalls
- Align GM's strategic plans with emerging technologies and evolving demands

09:00

OEM PANEL

SMART Manufacturing In The Digital Age

MODERATOR: Steve Winski, Business Development VP, CESMII

Miguel Saez Ph.D., Manager, Automation Execution, General Motors

Brian Breuhan, Global Manufacturing Optimization Strategist, General Motors

Aaron K. Dunlap, ME Tech Fellow, Manufacturing Execution Systems-Architect ME Vehicle Systems, General Motors

Michael Flynn, Data Science, Analytics, & Product Management, RIVIAN

Madhu Rao, Senior Engineer – Chassis Engineering, Product Development, IoT, Tesla

Matt Myrand, Manufacturing Innovation Director, FORVIA

Konstantin Popov, VP, Enterprise Technology & Financial Management, Cprime

Discussion Points for Panel:

- Explore how predictive maintenance, real-time monitoring, and adaptive production processes are transforming automotive manufacturing
- Discuss the role of virtual prototyping and testing in reducing time to market and enhancing product quality
- Examine the impact of collaborative robots (cobots), autonomous mobile robots (AMRs), and automated guided vehicles (AGVs) on assembly line flexibility and agility
- Delve into how data tools are used to analyze manufacturing data, uncover insights, and optimize decision-making for continuous improvement
- Identify the challenges and solutions for protecting sensitive data, securing interconnected systems, and mitigating cyber threats.
- Discuss strategies for leveraging blockchain and other technologies for transparent and efficient logistics, inventory management, and supplier collaboration
- Highlight the importance of training programs that equip employees with the necessary skills to thrive in an increasingly digitalized manufacturing environment

09:40

DIGITAL TWINS

Digital Twins And The Industrial Metaverse In Data Driven Manufacturing

Brian Breuhan, Global Optimization Strategist – General Motors

- Understand types of digital twins across the product lifecycle and how they are used in the concept, create, operate, and dispose phases, aiding in virtual modelling, testing, real-time monitoring, and sustainable disposal
- Reveal how digital twin can offer benefit without physical counterparts and enable early design validation, cost-efficient virtual testing, accelerated development, and risk mitigation, eliminating the need for initial physical prototypes
- Discuss the value in the create phase and how digital twins maximise value by moving physical testing and validation to the virtual realm, optimising designs, and saving resources during the product development phase
- Investigate the possibilities of time manipulation in simulations that allows forward and backward time simulations, predictive maintenance, and scenario analysis, providing insights into future performance and potential degradation
- Explore industrial metaverse integration and how it connects digital twins with IIoT and extended reality, enhancing real-time collaboration, decision-making, and seamless transitions between the physical and

digital worlds

10:00

AI

GenAI In Automotive & Manufacturing-Unlocking Next level Of Efficiencies

Manbir Singh, Digital Transformation Leader - Automotive, Kyndryl

- Analyze the transformative impact of Generative AI (GenAI) on the automotive and manufacturing sectors
- Understand how GenAI is revolutionizing traditional workflows and processes
- Examine how GenAI democratizes data, making it more accessible to a broader range of users
- Learn how GenAI empowers users to leverage data without needing specialized technical skills
- Discover innovative ways GenAI facilitates the creation and consumption of information
- Explore methods beyond conventional dashboards and real-time alerts
- Implement conversational AI for more intuitive user interactions
- Use AI to predict equipment failures and schedule maintenance proactively, reducing downtime and increasing operational efficiency
- Employ AI-driven quality inspection and defect detection to streamline operations and reduce manual intervention
- Optimize resource allocation and production processes using AI technologies
- Identify cost savings through predictive analytics and automation

10:30

AUTOMATION

Shifting Gears: How Automation Fueled by Industrial DevOps Is Reshaping Automotive Manufacturing

Gerry Abbey, Director of Product Marketing, Copia Automation

- Highlight the transformative shift in the automotive industry where the sector is rapidly evolving with increased automation and digitalization, driven by the need to optimise production lines, improve efficiency, and enhance product quality. This transformation is essential for maintaining competitiveness in a fast-changing market
- Insights from Industry Leaders: The State of Industrial DevOps Report, based on insights from 200 senior-level manufacturing executives across North America, highlights how leading automotive manufacturers are successfully implementing automation technologies. These insights provide valuable benchmarks and strategies for other companies looking to follow suit
- Reveal how industrial DevOps are critical in accelerating the adoption of automation. By integrating development and operations processes, it helps maximise the impact of automation technologies, ensuring smoother implementation, faster iteration, and continuous improvement in manufacturing operations
- Emphasise that leveraging Industrial DevOps not only facilitates the adoption of advanced automation but also offers a significant competitive advantage. Companies that effectively implement these practices can achieve higher efficiency, better product quality, and overall enhanced operational performance, positioning themselves ahead in the industry

10:50

QUALITY

How Predictive Quality Leverages Machine Learning And Manufacturing Data To Detect Defects In Real Time And Perform Faster Root Cause Analysis

Aaron Alberts, Vice President - Customer Success, Acerta

- Understand how Industry 4.0's advancements in industrial data collection, machine learning, and cloud computing have enabled the development of predictive quality solutions that integrate seamlessly into manufacturing processes
- Learn how predictive quality software ingests and analyzes data from various sources, such as process parameters, product attributes, and test data, to identify hidden links and improve quality insights
- The importance of real-time data ingestion and automated root cause analysis that allow manufacturers to quickly identify and address quality issues, reducing downtime and enhancing efficiency
- How to maintain product quality with machine learning algorithms that detect anomalies in manufacturing data, providing alerts for potential defects and enabling timely interventions
- Discuss how predictive analytics provides immediate, real-time and actionable insights that can greatly improve the ability to perform root cause analysis and even guide business decisions



11:10

Morning Networking Break

11:40

AI & GEN AI

AI for Automated Generation of Robot Programs for Complex Manufacturing Tasks: From ideation to Implementation

Miguel Saez Ph.D., Manager, Automation Execution, General Motors

- Understand how developing robot paths for various manufacturing applications remains a time-consuming and resource-intensive task
- The manual programming of these paths requires significant expertise and is essential for ensuring safe and collision-free robot movements, which impacts overall efficiency and productivity
- Highlight the use of Reinforcement Learning (RL) to automate the generation of optimal robot paths in manufacturing environments. By leveraging AI algorithms and simulation or off-line programming tools, RL can create paths that are shorter and faster, minimising cycle times and maximising robot utilisation
- Reveal how AI-generated paths can significantly reduce cycle times, leading to enhanced robot utilisation and overall operational efficiency. The optimization of robot movements and the reduction in programming time result in higher throughput and increased production output
- Discuss AI's ability to adapt to changes in the environment or production tasks without manual intervention allows for the automatic generation of new optimal paths. This flexibility ensures that manufacturing operations remain efficient and responsive to varying conditions and requirements
- Explain how AI can continuously learn and improve path generation based on real-time data, leading to ongoing efficiency gains. The implementation

of AI-driven robot path generation in real robotic assembly cells demonstrated significant potential to revolutionise manufacturing operations, contributing to a more competitive and sustainable manufacturing landscape

12:00

AI & GEN AI

Unleashing The Future Of Automotive Manufacturing: Harnessing Cloud Accelerators And Generative AI For Smart Manufacturing Excellence

Balaji Srinivasan, Automotive Sector Head, DXC Americas

Brian Riordan, Client Partner, DXC Americas

- Understand the ground-breaking role of Generative AI in automating complex manufacturing processes, optimizing design, and enhancing production efficiency. Learn how this technology is driving innovation and reducing time-to-market for automotive products
- Explore how IoT devices, when combined with cloud-provisioned tools, can create a seamless, connected manufacturing ecosystem. Gain insights into real-time data collection, monitoring, and analytics that enable predictive maintenance, reduce downtime, and improve overall operational efficiency
- Dive into the practical applications of AI and ML in automotive manufacturing. Discover how these technologies are used to predict market trends, optimize supply chains, and enhance quality control processes, leading to smarter decision-making and better resource management
- Learn about the scalability and flexibility offered by cloud-based solutions, allowing manufacturers to adapt quickly to changing market demands. Understand how cloud infrastructure supports the rapid deployment of new applications and services, ensuring continuous innovation and growth
- Gain strategies for accelerating the adoption of Smart Manufacturing technologies within your organization. From overcoming common implementation challenges to understanding the benefits of a cloud-first approach, this session will provide actionable insights to drive your digital transformation journey
- Equip yourself with the knowledge to stay ahead in the competitive automotive industry by leveraging the power of cloud accelerators and generative AI for a smarter, more efficient manufacturing future

12:20

DATA AND ANALYTICS

How Automakers Can Deploy Analytics At Scale Using A Hybrid Cloud Strategy

Vikram Mankar, Principal Product Manager, GE Vernova

In the realm of automotive manufacturing, the effective use of operational data is crucial for innovation and efficiency. However, it is a well-known fact that most companies utilize less than 1% of their operational data. This session will explore how automotive manufacturers can leverage Smart Factory innovations to maximize the potential of their data. By deploying a hybrid cloud strategy, automakers can empower their workforce, democratize data, and implement advanced monitoring and analytics applications. Attendees will gain insights into practical methods for overcoming current and future manufacturing challenges through scalable analytics solutions.

- Learn how automakers can enable their domain experts to harness the power of analytics and

machine learning (ML) tools. By providing plant floor professionals with the right analytical tools, manufacturers can solve complex production challenges more effectively and improve operational efficiency

- Understand the importance of making data accessible to everyone within the organization. Democratizing data involves breaking down silos and ensuring that data is available to all relevant stakeholders, enabling them to make informed decisions based on comprehensive insights
- Discover how hybrid cloud architecture facilitates condition-based monitoring and other critical applications. Hybrid clouds combine on-premises infrastructure with cloud services, offering flexibility, scalability, and enhanced data security, essential for modern automotive manufacturing environments
- Explore strategies for scaling analytics across the entire organization. This involves implementing robust data management frameworks, adopting scalable cloud solutions, and ensuring that analytics tools are integrated seamlessly into existing workflows to drive continuous improvement and innovation
- Gain insights into how Smart Factory innovations can help automotive manufacturers not only tackle current production challenges but also anticipate and mitigate future issues. By leveraging advanced analytics and a hybrid cloud strategy, companies can stay ahead of the curve and maintain a competitive edge in the evolving automotive industry

12:40 DIGITAL TRANSFORMATION

Why The Digital Thread Is Crucial To Digital Transformation

Aleksandar Boskovic, Managing Director Automotive Business, Kalypso

- Understanding that the foundation of digital transformation is a connected enterprise that unites and integrates IT and OT
- Maximizing the benefits from the digital thread of information that spans the entire value chain
- Recognizing the importance of partnering with best-in-breed providers on a unified, open architecture for the automotive industry
- How to complete the work on closed-loop connectivity architecture among software solutions, starting from customer requirements
- Deploying the connected value chain software offering and tying in the software solutions with their respective physical twins to provide both virtual and real client experience

13:00

AI & GEN AI

Leveraging AI and Analytical Efficiency for Predictive Maintenance

Dr. Jeremy Frank, Co-Founder and CEO, KCF Technologies

- **The Evolution of Data Analysis:** A brief overview of how data analytics has evolved over the years, shifting from manual spreadsheets to automated algorithms, and the current challenges that demand more sophisticated approaches
- **Machine Learning and AI:** An introduction to some of the groundbreaking computational methods reshaping the way we view and analyze data. This includes machine learning and other forms of artificial intelligence that can process and interpret data at unprecedented scales and speeds
- **Practical Applications and Case Studies:** Demonstrations of real-world scenarios where these techniques have been applied, highlighting

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their successes, and importantly, the lessons learned from their failures

- **Advantages of New Technology:** A discussion on the merits of integrating these advanced techniques, their potential to reduce human error, increase speed and efficiency. Most importantly, with the challenging work force, how to elevate people using technology
- **Best Practices for Implementation:** Concrete steps and recommendations for organizations looking to harness these techniques

13:10

Network Lunch Break

14:00 CHAIRMAN'S WELCOME

Overview Of Key Challenges, Learning Objectives, And Opportunities In Industry 4.0 For Smart Automotive Manufacturing

Mike Nager, Smart Manufacturing Advocate and Award-Winning Author and Solutions Director, Festo Didactic - North America

- Understanding the influence of changing national and international orders on manufacturing strategies, emphasizing the need for agility and adaptation in operations
- Recognizing the looming threat from international competitors in the electric vehicle market, and identifying strategies to maintain a competitive edge through innovation and strategic positioning
- Exploring how sustainability and resilience are becoming key differentiators in the market, and learning how to integrate these principles into manufacturing processes for long-term success
- Debating the terms soft skills, durable skills, and human skills, and understanding their relevance and impact on workforce development in the manufacturing sector
- Acknowledging the increasing importance of soft skills in a traditionally technical field, and understanding their role in enhancing teamwork, leadership, and innovation within manufacturing
- Recognizing the collective responsibility to invest in education and training, ensuring a steady pipeline of skilled talent and fostering a culture of continuous learning and development within the industry

14:20

OEM PANEL

Roadmap For Automotive Smart Manufacturing - Navigating The Future Of Automotive Manufacturing

MODERATOR: Manbir Singh, Digital Transformation Leader - Automotive, Kyndryl
Jonathan Wise, Vice President Technology, CESMII

Fernando Bera, Engineering Supervisor - ZF Group

Michael Flynn, Data Science, Analytics, & Product Management - RIVIAN

Brian McIntyre, DMS (Digital Manufacturing Systems) Controls Software Development, Ford

- Connected Workforce and IT Infrastructure: Learn about the importance of fostering a connected workforce and modernizing manufacturing

IT infrastructure to improve productivity and resilience in the automotive sector

- **Smart Manufacturing Mindset:** Understand the principles of a Smart Manufacturing Mindset™ that align education, workforce development, and continuous improvement strategies to create data-driven cultures
- **Data-Driven Operations:** Discover strategies for using data to empower employees and inform real-time operations and long-term resource planning, enhancing business orchestration and decision-making
- **Collaboration and Innovation:** Explore how to enable innovation through data interoperability and open interfaces, eliminating data silos and vendor lock-in to reduce complexity and improve efficiency

15:00

DATA & ANALYTICS

Revolutionizing Automotive Manufacturing: How Ford Is Leveraging Generative AI, ML Anomaly Detection, Computer Vision, And Connected Vehicle Streaming Data To Transform The Industry

Rajeev Kalamdani, Director, Manufacturing & IIoT Analytics, FORD

- The automotive manufacturing industry stands on the brink of a revolution, fueled by cutting-edge technologies like Generative AI, ML Anomaly Detection, Computer Vision, and Connected Vehicle Streaming Data. Let's break down how each of these technologies is making its mark using real life examples from Ford:
- **Generative AI (using LLMs):** Still in early stages, but showing promise for automating design processes, generating code for manufacturing systems, and creating technical documentation. Challenges include ensuring accuracy, addressing potential bias, and explaining AI-generated outputs
- **ML Anomaly Detection:** A mature technology already used for predictive maintenance (reducing downtime), real-time quality control (catching defects early), and process optimization (identifying bottlenecks). The need for large training datasets and adaptation to new processes are ongoing challenges
- **Computer Vision:** Widely used for robot guidance, worker safety monitoring, and automated quality inspection. Challenges include developing robust algorithms that handle varying lighting and environmental conditions
- **Connected Vehicle Streaming Data:** Early adoption, but holds massive potential for improving vehicle performance, enhancing predictive maintenance with real-time data, and even enabling personalized manufacturing in the future. Data privacy and security are paramount concerns that need to be addressed

The automotive manufacturing landscape is being reshaped by these powerful technologies. While challenges remain, the potential benefits in terms of efficiency, quality, safety, and personalization are enormous. We are only beginning to scratch the surface of what's possible with AI, ML, and connected data in this exciting field.

15:20

FINANCE

Faster To Showroom, Faster To Profits: Align Cutting-Edge Enterprise Operating Models, Platforms, And Technology

Konstantin Popov, VP, Enterprise Technology & Financial Management, Cprime

This session will explore how modern enterprise operating models, unified technology solutions, and integrated platforms can help automotive companies drive progress, streamline operations, accelerate innovation, and ultimately improve financial performance. Align your way of working with the right tooling to empower your organization to:

- **Alignment:** Align enterprise strategy with team-level execution, ensuring optimal resource allocation and faster time-to-market, leading to increased revenue and market share
- **Optimization:** Leverage strategic portfolio management to optimize labor and resource deployment, expediting the delivery of innovative features and technologies while controlling costs and maximizing return on investment
- **Efficiency:** Utilize predictive maintenance, digital twin simulations, and advanced analytics to streamline vehicle development and reduce manufacturing downtime, minimizing the financial impact of production delays
- **Adaptability and Innovation:** Harness real-time data and AI to optimize the supply chain, minimize bottlenecks, and rapidly adapt to evolving consumer demands, preventing lost revenue due to missed market opportunities
- **Collaboration:** Effectively manage workforce and vendor dependencies to ensure seamless collaboration and timely delivery of projects, avoiding costly delays and budget overruns
- Actionable insights and practical strategies to reduce time to market for new vehicles, improve production efficiency, control program costs, increase overall equipment effectiveness (OEE), and drive profitability
- Best practices for aligning strategy, execution, and technology to drive automotive progress, prevent costly delays, and optimize financial performance
- Real-world examples of how automotive companies have successfully navigated the rapidly evolving landscape, secured their position at the forefront of the industry, and improved their bottom line

15:40

CLOUD

Accelerating Cloudification For The Generative AI Era: Adopting Cloud At Scale For OT And Engineering Systems

Sharath Prasad, AVP and Head of Smart Manufacturing Solutions, Cognizant

- Understanding how over the past 15-20 years, automotive manufacturers have adopted digital technologies and have successfully enabled connected factory systems
- Explaining how these systems help in digitized real-time monitoring, KPI management and reporting, but the current architectures keep data and operations siloed for each plant. Additionally, the level of standardization (e.g., KPI metrics) has also been limited
- Discussing recent advances in connectivity, compute, storage and cost and how they now offer more attractive options for OT and engineering systems to adopt cloud technologies
- Explaining the advantages of moving OT systems to the cloud, and how manufacturers can extract value through improved speed to insights, faster adaptability and greater flexibility on resource utilization, without compromising on performance requirements, to achieve better economic benefits— all of which make cloud adoption an attractive proposition
- Revealing how cloud adoption for OT systems drives improvements in the standardization and scale and edge-cloud architecture

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16:00**AI & GEN AI**

The Future is Now: AI in Automotive Manufacturing

Patrick Tew, Enterprise Sales Manager, **MakinaRocks**

- Discover how AI's rapid evolution is revolutionizing automotive manufacturing, enhancing anomaly detection, predictive maintenance, and overall production quality
- Understand why conventional AI initiatives often fail due to barriers like insufficient data and conservative practices, and learn strategies to overcome these challenges
- Explore the success of AI projects that are specifically tailored to the complexities of automotive manufacturing
- Learn about the specific benefits of AI for manufacturing, including higher-quality parts, cost savings, minimized downtime, and improved efficiency
- Take action now to leverage AI in your automotive manufacturing processes, gaining a competitive edge with faster, more efficient operations and lower costs

16:20**DATA & ANALYTICS**

Bridging The Gap By Achieving Interoperability In Automotive Manufacturing

Michael Flynn, Data Science, Analytics, & Product Management, **RIVIAN**

- Highlighting the critical role of interoperability in facilitating seamless data exchange and collaboration among diverse systems, applications, and devices within the automotive manufacturing ecosystem
- Discussing the challenges faced in achieving interoperability, such as disparate data formats and protocols, and presenting strategies and solutions for overcoming these challenges through standardization and integration efforts.
- Exploring existing standardization initiatives and frameworks aimed at promoting interoperability in automotive manufacturing, including efforts to standardize data formats, communication protocols, and interfaces across different systems and devices
- Illustrating the benefits of interoperability, such as improved efficiency, enhanced productivity, reduced operational costs, and increased flexibility in adapting to changing market demands and technological advancements
- Sharing best practices and real-world case studies of successful interoperability implementations in automotive manufacturing, highlighting lessons learned, key success factors, and recommendations for industry stakeholders embarking on interoperability initiatives

16:40**DATA & ANALYTICS**

How Digital Manufacturing Optimizes Production Through Process

Rick Homman, Dir. Manufacturing, **FORCAM US**

- Understanding that basic Lean Principles Haven't Changed and are still the best way to run your plant
- Explaining why digital Transformation is not about replacing those basics, it is about allowing them to work better than they ever have before
- Presenting a case study on the voice of the machine

- Discuss three things you can do today if you are not already - pick one bottleneck and work through the theory of constraints, measure OEE and democratize downtime resolutions
- The advantages of using data pushes and the ability to resolve downtime problems farther down the org chart
- Define why things are working, and why they are not - why does something work? Can it be repeatable?
- Identifying the primary reasons that something is not working? How do we control that?

17:00**ENISCO FORCAM**

Afternoon Network Break

17:30**ROBOTS & AUTOMATION**

Unlocking Efficiency: Why Every Vehicle Factory Needs Automated Vehicle Marshalling (AVM)

George Geros, Commercial Director, **Embotech AG**

- Explore the technological underpinnings of AVM. Gain insights into the advanced systems, including sensors, machine learning algorithms, and real-time data processing, that enable AVM to optimize vehicle movements
- Understand how these technologies integrate to streamline operations and enhance efficiency
- Discover how AVM effectively addresses the limitations and inefficiencies of traditional vehicle marshalling methods and tackle traditional bottlenecks
- Learn about specific challenges such as congestion, scheduling conflicts, and human error, and see how AVM provides innovative solutions to enhance productivity and reduce downtime in factory environments
- Look into the future possibilities and broader applications of AVM technology and discuss potential uses in diverse industries
- Understand the scalability and adaptability of AVM for various logistical challenges

17:50**DIGITAL TWINS**

Unveiling The Power Of Digital Twins For Automotive Manufacturing Process Optimization

Michael Bradford, DELMIA Strategic Business Development Director, **Dassault Systèmes**

- Explore how digital twins simulate production workflows, providing insights into potential bottlenecks and inefficiencies in automotive manufacturing processes
- Discover the benefits of real-time monitoring enabled by digital twins, allowing manufacturers to track production metrics and make informed decisions to optimize operations instantly
- Learn how digital twins help automotive companies optimize resource utilization by identifying areas of over or underutilization, leading to cost savings and improved productivity
- Understand how digital twins facilitate waste reduction strategies by pinpointing areas of waste generation and enabling targeted interventions to minimize waste generation and disposal
- Explore how the integration of digital twins fosters a culture of continuous improvement in automotive manufacturing, driving ongoing optimization efforts to maximize efficiency and competitiveness

18:10**AUTOMATION**

Vastly Reduce Your Ethernet Network Downtime By Solving Most Factory Floor Networking Problems In Five Minutes or Less

John S. Rinaldi, CEO and Business Development Manager, **Real Time Automation**

- Understand the inevitability of Ethernet network failures due to various factors such as physical wear and tear, bandwidth overload, and human error
- Learn how to identify the common causes of network failure and the impact they can have on factory operations
- Gain knowledge on proactive measures to minimize the risk and frequency of these failures.
- Recognize the significant financial impact of network downtime, with costs ranging from hundreds to tens of thousands of dollars per minute
- Understand how to calculate the true cost of downtime in your specific environment and the importance of minimizing these interruptions to maintain productivity and profitability
- Learn strategies for reducing downtime and its associated costs
- Evaluate the limitations of current tools and technologies used for Ethernet network management on the factory floor
- Understand why traditional methods fall short in predicting, diagnosing, and resolving network issues promptly
- Learn about the gaps in existing solutions and the need for more advanced, real-time tools that can provide accurate diagnostics and faster resolutions

18:30**WORKFORCE**

Innovations In Predictive Maintenance, Supply Chain Resiliency, Blockchain, Digital Twins, Sustainability, And Workforce Development

Ragu Athinarayanan, Director, **Smart Manufacturing Innovation Center Purdue University**

Revolutionizing Maintenance With Predictive Technologies

- Discover how Industry 4.0 and IoT sensors enable predictive maintenance, minimizing downtime and reducing costs
- Advanced analytics and machine learning predict equipment failures, optimizing maintenance schedules and extending equipment lifespan

Enhancing Supply Chain Resiliency And Risk Management

- Explore how IoT and real-time monitoring improve supply chain visibility, allowing quick responses to disruptions
- Advanced analytics and AI models facilitate robust contingency planning, ensuring continuous production during unforeseen events

Boosting Supply Chain Visibility With Blockchain Technology

- Learn how blockchain ensures transparency and traceability, improving accountability from origin to end customer
- Blockchain enhances efficiency in supply chain processes, such as inventory management and compliance verification

Harnessing Digital Twins For Manufacturing Excellence

- Digital twins create virtual replicas using real-time IoT data, optimizing production processes and reducing risks

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- They diagnose issues and predict maintenance needs, improving decision-making and product quality

Promoting Sustainability In Manufacturing

- Advanced Industry 4.0 technologies enhance resource efficiency, reducing waste and minimizing environmental impact
- Smart factories optimize energy consumption and adopt circular economy practices, promoting eco-friendly manufacturing

18:50

AI & GEN AI

Smart Manufacturing In Action: How AI-Powered Digital Labor Saves A Top Tier Auto Supplier Hundreds Of Millions Of Dollars

Phillip Schume, Associate Partner, IBM

- IBM built a digital inspector with an Acoustic Foundation Model (GenAI) to monitor weld quality real-time during the manufacturing process, which can understand nuances beyond human capability
- Learn about an AI solution for Quality Inspection that is more accurate, faster and cheaper than the traditional process
- Understand how developing scalable real-world solutions require orchestrating AI, Hybrid Cloud and IoT to drive results
- See how re-thinking the role of technology in the inspection process drove higher quality with less destructive testing and human intervention
- Understand how thinking about GenAI beyond LLMs drove better ability to scale across plants to driver better return
- Learn how bringing complex Smart Manufacturing solutions to life require strategic alignment, coordination and collaboration across a multiple vendors and partners
- See how a business-case driven approach can achieve the C-Suite sponsorship needed build scaled solutions across a manufacturing estate

19:10

DATA & ANALYTICS

Applying The Generative AI Paradigm Shift To Enhance

Manufacturing Digital Transformation

Ed Lesnau IV, Director of Manufacturing & Mobility Industry Strategy, Microsoft

In today's rapidly evolving technological landscape, the manufacturing industry is poised to benefit significantly from advancements in Generative AI (GenAI). This session explores how embracing GenAI can revolutionize manufacturing processes and drive digital transformation.

- Recap the evolution of AI and how recent advancements in GenAI offer new opportunities to enhance existing and future digital transformations in Manufacturing. Discover leading GenAI use case patterns and available technologies that can accelerate your time to value and open new ways of working to improve operations and employee engagement
- Explore real-world examples of GenAI at scale and learn how these new technologies and approaches are challenging the status quo of shopfloor capabilities and behaviors. Gain insights from these examples to showcase what is possible and how other automotive companies are evolving to create competitive advantage and capture value
- Review characteristics of companies that have successfully navigated the complexities of this new technology and its rapidly evolving capabilities. Learn guiding principles for how to prepare your organization and leadership for change. Discuss key considerations for AI transformation to help assess readiness, and to empower you and your teams to lead AI transformations at scale

19:30

AI AND GENAI

Leveraging Smart Factory Strategies For Enhanced Problem-Solving

Fernando Bera, Engineering Supervisor, ZF Group

This session aims to provide insights into the effective integration of process expertise and Smart Factory strategies to address and resolve complex manufacturing issues and share the experiences gained in ZF's implementation of a Broach Quality

System.

- Understand the synergy between process experts and Smart Factory technologies in problem-solving
- Learn how leveraging the deep knowledge of process experts alongside advanced Smart Factory strategies can lead to innovative solutions and improved operational efficiency
- Explore case studies and real-world examples where this combination has successfully addressed complex manufacturing challenges
- Gain insights into the strategic decision-making process for implementing Smart Factory/Industry 4.0 solutions
- Learn about the advantages and disadvantages of building custom solutions in-house versus purchasing ready-made solutions from external vendors
- Understand the factors to consider, such as cost, scalability, integration capabilities, and long-term maintenance, to determine the best approach for your organization
- Explore the challenges associated with connecting and integrating data from various industrial devices in a Smart Factory environment
- Learn about alternative methods and emerging technologies that simplify connectivity and data integration
- Understand how to overcome common connectivity issues to ensure seamless data flow and real-time monitoring across your manufacturing operations
- Identify and understand the common traps and pitfalls associated with implementing Industry 4.0 initiatives
- Learn about potential challenges such as technology integration issues, data security concerns, workforce adaptation, and unrealistic expectations
- Gain practical knowledge on how to navigate these traps, mitigate risks, and ensure a successful and sustainable Industry 4.0 transformation

19:50

Chair's Closing Remarks

20:00

All Attendee Evening Drinks Reception



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EXHIBITOR CATEGORIES

Artificial Intelligence, Machine Learning, And Predictive Maintenance

Exhibitors in this category showcase advanced AI and machine learning solutions tailored for manufacturing applications. From predictive maintenance algorithms to AI-driven analytics platforms, these exhibitors offer cutting-edge technologies designed to optimize production processes, enhance efficiency, and drive innovation in smart manufacturing environments.

Augmented Reality (AR), Virtual Reality (VR), And Mixed Reality

AR, VR, and mixed reality technologies are transforming how manufacturers visualize, design, and interact with digital information. Exhibitors in this category demonstrate immersive AR/VR solutions for training, design visualization, and remote assistance, enabling enhanced collaboration, improved productivity, and streamlined operations across the manufacturing lifecycle.

Big Data Analysis And Cybersecurity

In an era of digitization, big data analysis and cybersecurity are paramount for protecting sensitive information and maintaining operational integrity. Exhibitors in this category offer advanced cybersecurity solutions, data analytics platforms, and threat detection technologies tailored for the manufacturing industry, helping organizations safeguard against cyber threats while leveraging data-driven insights to drive informed decision-making.

Digitalization And ERP Systems, Integration Platforms, And IoT

Exhibitors in this category provide comprehensive digitalization solutions, including ERP systems, integration platforms, and IoT technologies, enabling seamless connectivity, data exchange, and process optimization across the manufacturing ecosystem. From cloud-based ERP systems to IoT-enabled smart sensors, these exhibitors empower manufacturers to achieve operational excellence and drive digital transformation initiatives.

Robotics And Process Automation

Robotics and process automation technologies play a pivotal role in modern manufacturing, enhancing productivity, flexibility, and efficiency on the factory floor. Exhibitors in this category showcase a wide range of robotic systems, automation solutions, and end-of-arm tooling designed to automate repetitive tasks, streamline production workflows, and enable agile manufacturing process.

Testing, Inspection, And Certification Services

Quality assurance is essential in manufacturing, and exhibitors in this category offer testing, inspection, and certification services to ensure product quality, compliance, and safety standards. From non-destructive testing solutions to certification programs for industry standards, these exhibitors help manufacturers mitigate risks, maintain regulatory compliance, and deliver high-quality products to market.

Supply Chain Management And Logistics Solutions

Exhibitors in this category offer technologies and services for optimizing supply chain operations, managing inventory, and streamlining logistics processes. From supply chain visibility platforms to warehouse management systems and transportation optimization solutions, these exhibitors help manufacturers improve efficiency, reduce costs, and enhance customer satisfaction through effective supply chain management.

Energy Efficiency And Sustainability Solutions

Given the increasing emphasis on sustainability in manufacturing operations, exhibitors in this category provide solutions for energy efficiency, resource conservation, and environmental sustainability. From energy monitoring and management systems to renewable energy technologies and sustainability consulting services, these exhibitors assist manufacturers in reducing their carbon footprint, complying with regulatory requirements, and achieving sustainability goals.

Collaborative Robotics And Cobots

As collaborative robotics (cobots) gain traction in manufacturing, exhibitors in this category focus on collaborative robot systems, safety features, and human-robot interaction technologies. From collaborative robot arms and grippers to intuitive programming interfaces and safety sensors, these exhibitors enable manufacturers to implement safe and efficient human-robot collaboration in production environments, enhancing productivity and flexibility.

Smart Factory Infrastructure And Connectivity

Exhibitors in this category offer technologies and solutions for building smart factory infrastructure, including industrial networking equipment, communication protocols, and connectivity solutions such as industrial Ethernet, wireless communication, and edge computing platforms. These exhibitors enable manufacturers to create robust, scalable, and interconnected production environments that support real-time data exchange, remote monitoring, and control.

Human-Machine Interface (HMI) And Industrial Control Systems

Exhibitors in this category provide HMI solutions, industrial control systems, and software platforms for monitoring, controlling, and optimizing manufacturing processes. From intuitive operator interfaces and control panels to supervisory control and data acquisition (SCADA) systems and distributed control systems (DCS), these exhibitors offer technologies that enhance operator efficiency, improve process visibility, and facilitate data-driven decision-making.

Industrial Safety And Compliance Solutions

This category addresses industrial safety solutions, compliance management software, and services designed to ensure workplace safety, regulatory compliance, and risk mitigation in manufacturing environments. Exhibitors may showcase safety equipment, hazard detection systems, safety training programs, and compliance management software platforms that help manufacturers maintain a safe working environment, prevent accidents, and comply with occupational health and safety regulations.

Industrial IoT (IIoT) Platforms And Solutions

Exhibitors in this category focus on industrial IoT platforms, software solutions, and hardware devices tailored for smart manufacturing environments. These may include IIoT connectivity platforms, edge computing solutions, IIoT sensors and actuators, and IIoT gateways designed to collect, process, and analyze data from connected industrial devices and machinery. IIoT exhibitors enable manufacturers to harness the power of data analytics, predictive maintenance, and real-time monitoring to optimize production processes and improve operational efficiency.

Edge Computing And Fog Computing Technologies

Edge computing and fog computing are essential components of IIoT infrastructure, enabling real-time data processing and analysis at the network edge. Exhibitors in this category offer edge computing platforms, edge devices, and fog computing solutions that enable distributed computing and intelligence closer to the data source, reducing latency, bandwidth usage, and dependency on centralized cloud resources. These technologies are particularly relevant for latency-sensitive industrial applications and edge analytics use cases in smart manufacturing environments.

Industrial Cyber-Physical Systems (CPS) And Digital Twins

Industrial cyber-physical systems (CPS) integrate physical processes with digital technologies, enabling real-time monitoring, control, and optimization of manufacturing operations. Exhibitors in this category showcase CPS platforms, digital twin solutions, and simulation software that create virtual replicas of physical assets and production processes. These digital twins enable manufacturers to visualize, simulate, and analyze their operations, optimize production workflows, and predict performance outcomes with greater accuracy and efficiency.

Wireless Sensor Networks And Low-Power IoT Devices

Wireless sensor networks (WSNs) and low-power IoT devices play a crucial role in collecting data from distributed sensors and monitoring equipment in industrial environments. Exhibitors in this category offer WSN solutions, IIoT sensors, and battery-powered devices optimized for low-power operation and long-range communication. These technologies enable manufacturers to deploy cost-effective, scalable IIoT networks for monitoring environmental conditions, equipment health, and production metrics, facilitating data-driven decision-making and predictive maintenance strategies.

Industrial AI And Machine Learning For IIoT

As IIoT deployments generate vast amounts of data, industrial AI and machine learning technologies play a vital role in extracting actionable insights and optimizing manufacturing processes. Exhibitors in this category provide AI-powered analytics platforms, machine learning algorithms, and cognitive computing solutions tailored for IIoT data analysis and predictive modeling. These technologies enable manufacturers to uncover hidden patterns, anomalies, and trends in their data, leading to improved process efficiency, product quality, and operational performance in Industry 4.0 environments.

Industrial Blockchain And Distributed Ledger Technologies

Blockchain and distributed ledger technologies (DLT) have the potential to revolutionize supply chain management, asset tracking, and transactional processes in manufacturing. Exhibitors in this category showcase blockchain platforms, smart contracts, and decentralized applications (dApps) tailored for industrial use cases, such as product traceability, provenance tracking, and secure data sharing across supply chain partners. These technologies enhance transparency, trust, and accountability in Industry 4.0 ecosystems.



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