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# Top 10 Industrial Automation Trends in 2023

by Bryan Hellman    August 11, 2023



## **Welcome to the Future of Manufacturing!**

In a world where technology advances unprecedentedly, industrial automation stands at the forefront of innovation. From AI-powered robots working seamlessly alongside humans to integrating the Internet of Things (IoT) for real-time data analysis, the

manufacturing landscape  
is transforming like never before.

Whether you're a manufacturer looking to stay ahead of the curve, a tech enthusiast eager to understand the latest advancements, or a business leader aiming to leverage automation for growth, this comprehensive guide is tailored just for you.

Dive in, and discover how the fusion of artificial intelligence, advanced robotics, edge & cloud computing, and more are setting the stage for a transformative era in manufacturing. The future is here, and it's automated!

## **1. Artificial Intelligence (AI)**

AI is revolutionizing industrial automation by enabling machines to learn, adapt, and make decisions autonomously. It's being used to identify asset patterns and anomalies for optimizing production and reducing downtime. AI-powered solutions like South Korean startup **DAIM Research's** automated material handling system and Spanish startup **Inovako's** industrial vision are enhancing efficiency and precision.

## **2. Advanced Robotics**

Robots are replacing workers in hazardous environments and working alongside humans. Collaborative robots (cobots) perform tasks like assembly, packaging, and machine tending. Startups like **Isochronic** and

**Botshare** are offering innovative solutions for pick-and-place applications and autonomous mobile robots (AMR).

### **3. Industrial Internet of Things (IIoT)**

IIoT is essential for connecting industrial devices and machines to collect and analyze data in real-time. Startups like **VISUALYS** and **Akinê** are developing platforms and controllers that monitor and operate various industrial systems, enhancing production, safety, and efficiency.

### **4. Edge & Cloud Computing**

Edge computing offers real-time data processing, while cloud-based solutions simplify remote data access. Indian startup **DeepBrainz Technologies** and **NearbyComputing** are providing platforms that integrate both edge and cloud computing, aiding in real-time monitoring, data analytics, and storage.

## **5. Immersive Technologies**

Immersive technologies like virtual reality (VR) and augmented reality (AR) are improving worker efficiency by providing additional visualization and safety measures. These technologies are being used to train workers, simulate complex tasks, and enhance collaboration.

## **6. Blockchain**

Blockchain technology is ensuring the security of industrial automation processes by preventing cyber-attacks. It's being used to create transparent and unchangeable ledgers for transactions, enhancing trust and efficiency in the supply chain.

## **7. 5G Connectivity**

The implementation of 5G is improving connectivity between devices and machines. It's enabling faster data transmission and real-time monitoring, which is crucial for remote operations and IoT applications.

## **8. Wearables**

Wearable devices are being used to monitor worker health and safety. They provide real-time alerts on potential hazards and enable more efficient emergency response, contributing to a safer working environment.

## **9. Additive Manufacturing (3D Printing)**

3D printing is transforming manufacturing by allowing rapid prototyping and customization. It's reducing waste and enabling the production of complex geometries that were previously impossible.



## **10. Sustainable Manufacturing**

The rise in sustainable manufacturing practices is promoting energy efficiency and waste reduction. New technologies are enabling manufacturers to meet environmental regulations and societal demands for sustainability.

## **Conclusion**

The industrial automation landscape is witnessing rapid changes with the emergence of innovative technologies and startups. From AI and robotics to IIoT and sustainable manufacturing, these trends are shaping the future of the industry. Businesses looking to stay ahead must embrace these

technologies and adapt to the evolving industrial ecosystem.

By understanding and implementing these trends, manufacturers can increase production efficiency, reduce costs, optimize processes, and contribute to a more sustainable future. The collaboration between startups and established companies is further accelerating the adoption of off-the-shelf, quickly integrable, and scalable automation solutions.

The global distribution of startups and the continuous innovation in the field make industrial automation a hotbed of opportunities. Whether it's enhancing efficiency, improving safety, or driving sustainability, the top trends in industrial automation for 2023 are setting the stage for a transformative era in manufacturing.



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(877) 727-8757  
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