

Emerging Trends in Industrial Automation for 2025

MELTON MACHINE & CONTROL COMPANY HAS ALWAYS BEEN AT THE FOREFRONT OF INNOVATION. WITH 60+ ENGINEERS ON STAFF, WE KEEP A CLOSE EYE ON TECHNOLOGICAL ADVANCEMENTS SO THAT WE CAN SERVE OUR CLIENTS BETTER.

WHILE REVIEWING BOTH THE NEWS AND TRADE PUBLICATIONS THIS YEAR, WE NOTICED A NUMBER OF EMERGING TRENDS IN INDUSTRIAL AUTOMATION THAT WE'RE EXCITED TO SHARE. FROM INCREASED USE OF 5G TECHNOLOGY IN FACTORIES TO THE RISE OF HUMANOID ROBOTS, 2025 IS A TIME OF GROWTH AND TRANSFORMATION FOR THE INDUSTRIAL AUTOMATION SECTOR. HERE ARE THE TOP TRENDS YOU DON'T WANT TO MISS.

GROWTH IN THE USE OF COLLABORATIVE ROBOTS (COBOTS)

Traditionally, industrial robots required protective cages and barriers to work alongside humans safely. While this approach was necessary to protect workers from injury, it also limited the ways robots could be applied in industrial automation.

Over the past decade, however, this has started to change. Collaborative robots (known as "cobots" for short) have emerged as an exciting new way for humans to work alongside machines. Cobots use advanced sensors and safety systems to operate efficiently while keeping humans safe. The range of things cobots can do is vast, including welding, finishing, packaging, and assembly.

In 2025, the use of cobots has expanded beyond traditional manufacturing into sectors such as food processing, healthcare, and logistics. Cobots made up 11.6% of all industrial robots ordered in North America in Q1 2025, according to data from BusinessWire.¹ As a leader in cobot automation strategies, Melton is thrilled to be a part of this growing trend.

GROWING ADOPTION OF HUMANOID ROBOTS

Humanoid robots have long been discussed as a breakthrough in industrial automation, but until recently their real-world use cases were limited. That's beginning to change. In 2025, Hyundai is set to deploy humanoid robots in factory work, with Amazon, BMW, and Mercedes-Benz also testing the technology in their own facilities.²

What's driving this progress is not just advances in mechanical design, but the integration of artificial intelligence, especially large language models (LLMs). Unlike traditional programming, where robots are limited to pre-set motions, AI gives humanoid robots the ability to process information, interpret language, and make context-aware decisions. LLMs provide a framework for robots to adapt in real time, whether that means adjusting to unexpected part variations or following more natural operator instructions.

These capabilities open the door to smarter, more versatile robots that can be redeployed across different tasks instead of being locked into a single function. While widescale adoption is still on the horizon due to safety and cost considerations, the combination of humanoid robotics and AI points to a future where automation systems can interact with their environments—and with human workers—in far more flexible ways.

DATA-DRIVEN PREDICTIVE MAINTENANCE

Scheduled maintenance is the norm in industrial facilities, and it's essential for keeping your automated solutions operating safely and productively. Breakdown maintenance is also key, as broken equipment costs you money every minute it's offline.

But what if you could anticipate maintenance needs and proactively fix your industrial equipment before it breaks? This is the promise of another emerging trend: predictive maintenance. With a combination of sensors, cloud computing, and data analytics, it's now possible to predict equipment failure well before it occurs.

Predictive maintenance can decrease downtime and maintenance costs significantly, saving on scheduled repairs and reducing equipment breakdowns. These predictive maintenance systems are something Melton is excited to explore as part of our tailored automation solutions.

5G TECHNOLOGY INTEGRATION

5G internet is handy for video conferencing or getting online without WiFi. But in 2025, it's also transforming the way industrial facilities operate. Private 5G networks within factories allow machines to connect and coordinate with each other in real-time. The low latency of such 5G networks means that complex automated machines can work with the utmost precision. And building these networks privately mitigates cybersecurity threats since outside devices can't access them.

To see what this can look like in action, consider autonomous mobile robots (AMRs). AMRs use advanced mapping and system sensors to navigate industrial facilities in real time without pre-defined paths. The addition of 5G helps AMRs operate even smarter, as they can coordinate with other 5G-connected robots in the facility. Melton has partnered with companies to customize AMRs for many different purposes, including inventory management and materials handling.

AUTOMATION AS A DRIVER OF SUSTAINABILITY

When we discuss the benefits of industrial automation, we tend to focus on improvements in safety, efficiency, and accuracy. But in 2025, another potential benefit is emerging: increased sustainability.

Manufacturers are integrating AI into their processes to improve energy efficiency and reduce material waste. These optimizations are no longer optional, as resource depletion, climate change, and shifting consumer preferences place increased pressure on companies to use more sustainable practices.

Melton is excited to be a part of this trend, and we're happy to collaborate with your business to design and implement automation solutions that increase sustainability.

Sources

1. <https://www.businesswire.com/news/home/20250512420344/en/North-American-Robot-Orders-Hold-Steady-in-Q1-2025-as-A3-Launches-First-Ever-Collaborative-Robot-Tracking>
2. <https://www.ft.com/content/02f72125-dbc9-451d-84f8-1dc9e8bfb8ee>

Contact Melton Machine & Control Company Today

At Melton Machine & Control Company, we recognize that changes in technology help to grow the industrial automation sector. At the same time, there are some things we'll never change, such as our commitment to serving our customers.

With so many shifts in the automation sector in 2025, it's understandable to have questions. If you're curious about how new trends in industrial automation can revolutionize the way your facility operates, we'd love to help. **Contact Melton today to start a conversation about a tailored automation solution that works for you.**

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