

The Artificial Intelligence of Things: Where AI and IoT meet

Act on IoT data at its source to accelerate business performance



Don't just gather IoT data. And don't just analyze it. Act on it – automatically.

As you're reading this, your organization may already be gathering massive volumes of useful data from IoT-enabled devices and sensors at its outer reaches. If so, you're already off to a strong start.

But the real question is what is your organization doing with all that IoT data? For starters, if you're not analyzing the data, it has virtually no value. Even then, analysis is still only a means to an end, pointing the way to a set of meaningful actions for solving specific business problems, using the insights that come from analysis. Who or what is acting on those insights? How frequently, and with what success? That's where things get really interesting in light of the massive advances being notched in everything from IoT analytics to AI with machine learning and deep learning.

In short, it's now possible to act on data immediately and automatically, wherever it's generated, using a combination of artificial intelligence (AI) and IoT technologies - the artificial Intelligence of Things, or AIoT. With AIoT, devices learn from their specific use, or from each other, and then automate their actions.

It's a natural next step in the evolution of these complementary technologies, and one that holds tremendous business value implications. After all, AI systems thrive on the depth and volume of data that IoT systems are producing, whether on shop floors, in hospital rooms, on trucks, or in oil fields. IoT data, meanwhile, begs to be analyzed. And business leaders need to demonstrate better results - which come from greater insights, faster, more informed decision making, and more effective actions being taken in all parts of the organization. AIoT capabilities address all these needs together to give decision makers the ability to act more quickly and confidently, based on data and insights being generated from IoT assets.

Sample uses for AIoT capabilities across industries

- Maximizing equipment performance.
- Improving manufacturing quality.
- Minimizing impact of after-sale defects.
- Optimizing utility water and sewer quality.
- Predicting and planning inventory demands in retail.
- Enhancing real-time customer experience.
- Supporting smart grid reliability.
- Forecasting energy usage and optimizing load.
- Managing Usage Based Insurance (UBI) and processing claims frauds.
- Improving provider patient flow in health care.

The SAS and Intel approach: From collecting data to collective learning

No single vendor has all the capabilities and expertise required to achieve the full promise of AIoT on its own – you need partners who know what's possible with AIoT and how to implement it successfully, at scale, drawing from a set of fast-moving technologies.

That's where SAS and Intel come in. Together, we offer advanced capabilities in IoT, data processing, analytics and AI that are widely recognized for being at the forefront of their fields. We bring subject matter expertise and domain knowledge in each of these areas to our customers' IoT insight opportunities, helping them move from merely collecting data to collective learning with:

- Streaming analytics.
- Edge and cloud analytics.
- Visual data mining.
- Machine learning and deep learning.
- Computer vision.
- Anomalous situation detection.
- Natural language processing, including text analytics.
- Neural networks.

The benefits

With AIoT capabilities, decision making can happen at a speed that exceeds human capabilities, which in turn helps companies accelerate new business model development and revenue streams

that drive greater profitability, enhanced customer experience, and better business performance and efficiency across the enterprise. Here are some of the specific ways in which that happens.

- Act on emerging data at the edge immediately and automatically to achieve results faster.
- Maximize the value of data at a scale that is impossible to replicate with solely human analysis and decision making.
- Identify and track long-term IoT data patterns that can inform key decisions in other parts of the organization.
- Accelerate the innovation cycle with more data, accurate derived insights and faster action.
- Automate a host of manual tasks to focus on activities that require human insights and abilities.

AIoT capabilities are ready today. Let's talk!

AI capabilities are mature. The IoT itself continues to advance and expand. And we've been conducting advanced analytics for decades now. The AIoT is ready to be put to work, and whether you're looking to start small with an experiment or go big, building on your existing strengths, we can help. The first step is a conversation to determine where you are in your data journey and where you want to go with the AIoT. Get started by visiting our AIoT-focused page at [SAS.com](https://sas.com/aiot), where you'll find more resources and contact information: sas.com/aiot

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