Is agentic AI the key to autonomous operations?

AVEVA's Lori Warda explains why agentic AI has the potential to revolutionise industrial operations and shares how the company plans to work with Microsoft to advance the technology

BY REBECCA GIBSON

Designed to understand complex workflows and execute actions to achieve goals autonomously with minimal guidance from humans, agentic AI solutions are set to make automating industrial operations easier than ever before. Lori Warda, AI product director at AVEVA, gives an insight into the benefits, challenges and potential future applications for the technology in the industrial sector.

What is agentic AI and how does it differ from generative AI?

Generative AI focuses on creating content by using large language models to generate text. It is an invaluable technology for improving access to industrial information and presenting it in a human-friendly and intuitive way. On the other hand, agentic AI is more autonomous. It can make decisions, take actions and operate in a loop, continuously improving and adapting. Agentic AI marks the next level in AI development and has the potential to revolutionise industrial operations.

Agentic AI follows a four-step process: it gathers and processes data, performs reasoning, takes action – whether making recommendations or executing tasks – and continuously learns to improve outcomes. The key difference is its autonomy. It handles more complex tasks than generative AI and allows for the integration of different functions and agents, making it even more powerful.

Can you provide examples of how agentic AI is used in industrial operations?

One major area we're exploring is the early stages of digital twin development. Currently, mapping data between different systems is a manual process. For example, if one system labels a piece of equipment as Pump 101 and another calls it Pump 101A, an individual must manually establish that connection. With agentic AI, we aim to automate this mapping

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process. If we can achieve 70 to 80 per cent accuracy, human reviewers can focus on the more complex cases, significantly reducing their workloads and accelerating digital twin implementation.

Another use case is enhancing AVEVA's Industrial AI assistant. Right now, it can answer queries like 'What was the average power usage in this area over the past 24 hours?'. With agentic AI, we want it to perform deeper analytics – collecting data, running calculations and generating insights autonomously.

In the future, we will see agentic AI monitoring systems, identifying issues and sending alerts when something goes out of tolerance, adding immense productivity and efficiency benefits.

What are the potential risks and challenges of deploying agentic AI in industrial environments?

One major challenge is ensuring reliable results. Unlike traditional software, where repeated tests yield the same output, AI models can produce varying results. This makes building a robust test framework challenging, especially as AI takes on more autonomy.

Another barrier is user acceptance. Most AI solutions today require human validation. As AI makes more decisions independently, developers must build trust with users and ensure they feel comfortable with the technology.

Overcoming these issues will require careful design, transparency and working closely with customers.

How embedded is agentic AI in AVEVA solutions today?

At this stage, we're in the experimental phase, conducting proof-of-concept work. We expect to release some initial capabilities as part of our planned roadmap.

An AVEVA team recently attended Microsoft's Customer Advisory Board Conference, where we learned about the latest advancements. Seeing how different industries apply AI helped validate our approach and introduced us to new tools we can build upon.

Tell us how AVEVA is collaborating with Microsoft to advance agentic AI.

Our partnership with Microsoft allows us to radically collaborate, combining our expertise and resources. Innovation thrives when diverse minds – and data sets – come together, and breakthroughs often stem from building on each other's ideas. The more we collaborate, the greater our capacity for true innovation. For instance, our engineers worked alongside Microsoft's to co-develop some features of our AVEVA Industrial AI assistant. This process accelerates development and ensures we leverage the latest advancements.

While we haven't collaborated on agentic AI yet, we expect to take a similar approach once our current projects are complete. Microsoft's conferences and industry insights also help shape our strategies.

What future agentic AI developments can we expect from AVEVA and Microsoft?

As part of our roadmap, agentic AI will be integrated into our Industrial AI assistant (which runs on Microsoft Azure OpenAI service), enhancing analytics capabilities. Unlike predictive analytics, where AI models are trained for specific assets or processes, our goal is to support dynamic queries and analysis, allowing users to perform a wide variety of tasks on the fly. We also see agentic AI playing a role in monitoring systems and building digital twins, embedding automation across industrial software solutions. ■

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