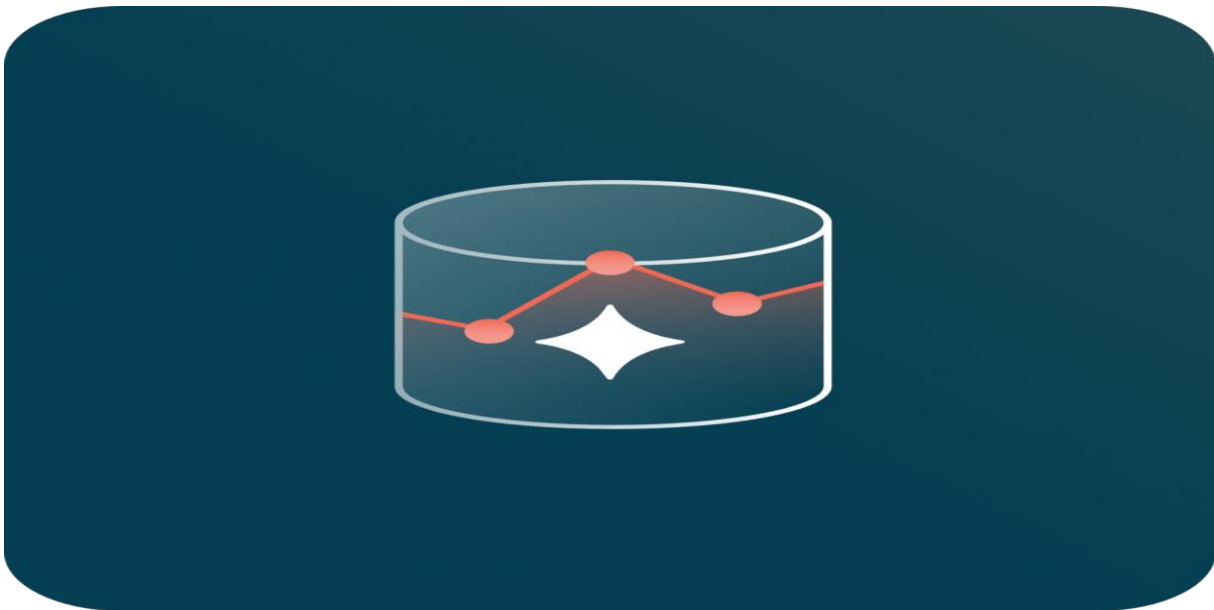


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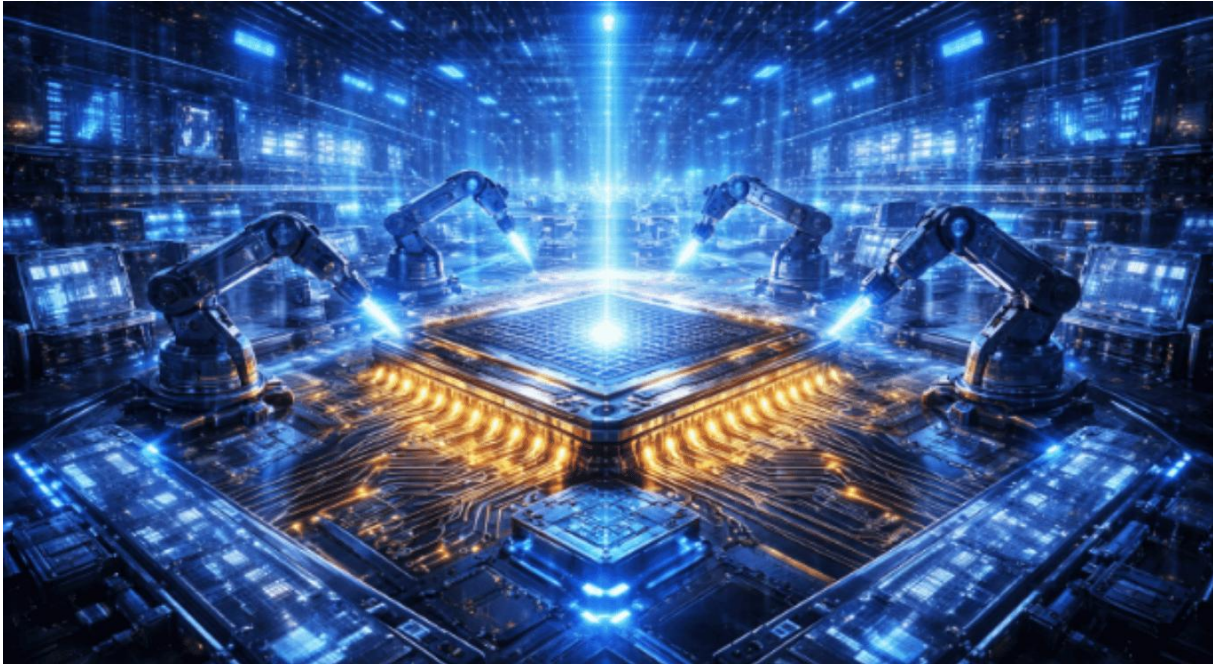
**Department of Data Science**  
**Weekly Data Science Byte**

## Oracle AI Database Delivers Mission-Critical Agentic AI Built for Business Data



- Many organizations, however, are still stuck in pilot mode while others are seeing AI projects fail in production. The challenge is the data foundation. While LLMs are exceptionally good at using the world's public information, they need trusted access to private business data to generate business value. This data is usually scattered in silos across formats, systems, and clouds. As a result, developers and IT teams must build patchwork solutions, often leading to challenges including performance bottlenecks, brittle integrations, complex pipelines, and unreliable answers. At the same time, AI is evolving from chatbots to AI agents that can autonomously plan, make decisions, and execute multi-step actions. But for Agentic AI to be effective, it requires fast and secure access to real-time operational data, which makes the data foundation even more critical.
- With 97% of Fortune Global 100 customers trusting Oracle for their business data, we understand the importance of activating this data for AI innovation without compromising security. This is why we are architecting AI directly into Oracle AI Database, so it's simple to use, fast, and secure. In fact, customers such as [Munich Re HealthTech](#), [Rappi](#), [Retraced](#), and [Uniti](#) are already benefiting from the AI capabilities in Oracle AI Database.

## TERAFAB Launched. Here Is What Elon Musk Actually Built



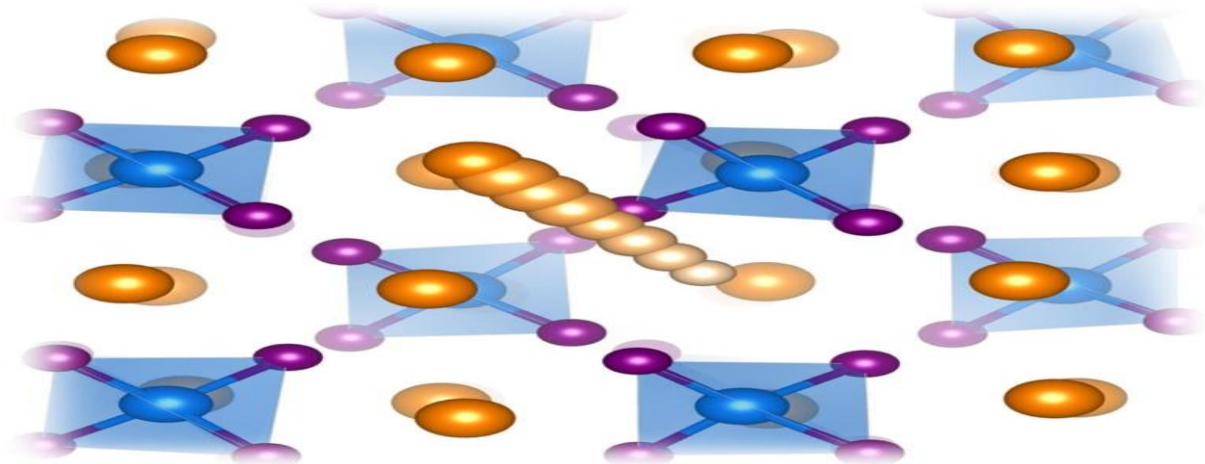
- [On the night of March 21](#), Musk took the stage at the Seaholm Historic Power Plant in Austin, Texas, and announced the largest chip manufacturing project in history. Light beams shot into the sky above the building. Texas Governor Greg Abbott sat in the audience. No construction timeline was given.
- As FinTech Weekly reported when Musk confirmed the launch date, TERAFAFAB had been signalled since Tesla's January 28 earnings call, where Musk told investors the company needed to build its own chip fabrication facility or face a supply constraint within three to four years. The event on March 21 turned that signal into a formal announcement — with a name, a location, a cost estimate, and a production target that has no precedent in the history of private semiconductor manufacturing.

## Tiny Brain-Inspired Device Could Solve AI's Biggest Energy Problem



- Researchers have created a new type of nanoelectronic device that could significantly reduce the energy demands of artificial intelligence by taking inspiration from how the human brain works.
- A team led by the [University of Cambridge](#) developed a modified form of hafnium oxide that functions as a highly stable, low-energy “memristor” — a component designed to replicate how neurons efficiently connect and communicate in the brain. The findings were published in Science Advances.
- Today’s AI systems depend on traditional computer chips that constantly move data between memory and processing units. This ongoing data transfer consumes large amounts of electricity, and demand is rising quickly as AI becomes more widely used across industries.

## AI Finds a Hidden Signal That Could Unlock Faster Solid-State Batteries



- All-solid-state batteries (ASSB) are widely viewed as a safer and potentially more energy-dense alternative to conventional lithium-ion batteries. Their performance relies heavily on how quickly ions can move through solid electrolytes. Finding materials that enable this rapid ion transport has traditionally required extensive synthesis and experimental testing. Researchers also rely on computer simulations, but many existing computational approaches struggle to accurately represent the disordered and high-temperature conditions where ions move most freely.
- Predicting when ions will move through a solid in a liquid-like way has been especially difficult. Standard computational methods that simulate these complex systems demand enormous computing resources, making them impractical for screening large numbers of candidate materials.