snowflake®

5 KEY TAKEAWAYS FROM SNOWFLAKE SUMMIT

Navigating AI, Powering Interoperability and Driving Customer Success with Snowflake

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SNOWFLAKE SUMMIT: DEFINING THE ERA OF ENTERPRISE AI

Enterprise AI is here. But unlocking the benefits of advanced AI for your business can be difficult. With our AI innovation cycles running in weeks, not years, Snowflake is keeping pace to help customers stay ahead in the AI race. At Summit, we unveiled a series of feature announcements to simplify the most complex data problems, making enterprise AI easy, efficient, powerful and reliable.

There were five major takeaways: Enterprise AI unlocks AI's full potential; a strong data foundation addresses four common AI problems; democratizing access powers AI-driven enterprise; Snowflake is committed to open source innovation; and the AI Data Cloud is driving success for leading companies.

Creating a unified data environment is essential to the success of enterprise AI. It prioritizes data security and privacy while unleashing the potential of gen AI for all nontechnical employees with greater speed and accuracy, driving productivity and engagement.

Whether you missed this year's event or were in the middle of it all, this ebook recaps some of the biggest takeaways to help you continue your organization's AI journey. We hope you enjoy this quick flashback — and that you're already signed up to attend next year's Summit in person.

With the latest developments in **Arctic**, our large language model (LLM) for enterprise, and the announcement that **Snowflake Cortex AI** — an easy, efficient and trusted way to create AI-powered applications — is generally available, we're removing the roadblocks that hinder progress and making AI accessible to every organization.

Here's how:

- It's **easy**: Enable more than just a few technical experts to use AI with fully managed services and infrastructure that just work and are accessible via code (SQL, Python, REST) and no-code interfaces
- It's **efficient**: Streamline the development-to-deployment lifecycle with top quality models and services that run next to the enterprise data
- It's **trusted**: Expand governance and granular role-based access controls, trusted by thousands of organizations, from the data to the models without complexity

1. ENTERPRISE AI UNLOCKS AI'S POTENTIAL

The impact of generative AI (gen AI) is already revolutionary but it won't always be a smooth ride. "In technology revolutions, true, massive opportunity comes once things become easy, when things go from the hands of the chosen few to the hands of many. The next 10 years will drive so much innovation, it'll dwarf what's happened in the last 20, even 30, years," Snowflake CEO Sridhar Ramaswamy said.

The power of gen AI will democratize access to enterprise data so any person can extract value immediately. "But the bar for enterprise AI is much higher than it is for consumer use. It has to be reliable. It has to be trustworthy," Ramaswamy said. "Our leading AI research team is working at breakneck speed to deliver easy, efficient and trusted AI to all of you. And of course, it's built into our unified platform that powers the AI Data Cloud."

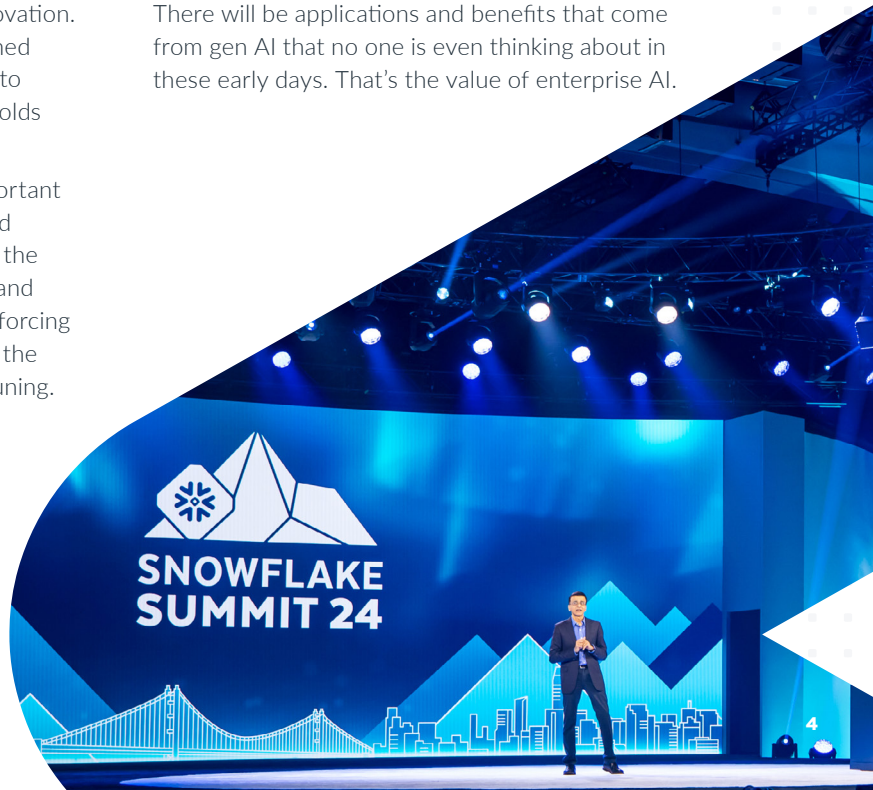
Gen AI will be as pervasive as smartphones, and companies will reinvent the way we work in response. Session after session at Summit highlighted the ways Snowflake is innovating to create and accelerate the positive — better efficiency, improved accessibility for the business user, accelerated innovations, enhanced customer experiences and more.

AI is still a burgeoning field. No story can be compelling without the ecosystem, which is why Snowflake has partnered with NVIDIA, among other industry leaders, to maintain the pace of innovation. In the opening keynote, Ramaswamy was joined by NVIDIA CEO and Founder Jensen Huang to discuss the promise an AI-enhanced future holds for enterprises.

Jensen explained that a company's most important asset is its proprietary data. With NVIDIA and Snowflake's partnership, customers will have the ability to embed that data, index it, search it and rank it to create a data flywheel — a self-reinforcing system that leverages user engagement with the product or service to inform its model fine-tuning.

As companies grow, as people shift roles or leave the company altogether, institutional knowledge tends to get lost. Once you engage gen AI, you connect the flywheel to your data. All your company's business processes can be captured and encoded, and inform future processes instead. It gives you the opportunity to make the most arduous tasks, which are often the most important elements of your business, as efficient as possible, leaving you time and energy to put toward more creative and innovative endeavors.

There will be applications and benefits that come from gen AI that no one is even thinking about in these early days. That's the value of enterprise AI.



2. USE A STRONG DATA FOUNDATION TO SOLVE 4 KEY PROBLEMS OF AI

Five billion queries. That's how much data-driven activity Snowflake sees on a daily basis. To wrap your head around that number, that's nearly the number of questions answered on Google daily. And it all starts with data. Rushing to take advantage of gen AI without an air-tight data strategy will cost enterprises time, money and resources. The data informing your AI models should be unsiloed and governed, with a strong regimen of anomaly detection and data-quality assurance. Snowflake Product EVP Christian Kleinerman and Snowflake Head of AI Baris Gultekin drove that message home.

"There's a big gap between aspiration and reality," Gultekin said. "With structured and unstructured data, spread across different cloud-based and on-premises locations, it's nearly impossible to take advantage of AI. A comprehensive data foundation, with security and governance baked in at the digital core, is non-negotiable."

"Snowflake is making it easier for users to put all of their data to work, without data silos or trade-offs," Kleinerman said, "so they can create powerful AI models and apps that transform their industries." The conversations between Kleinerman and Gultekin, and the fireside chat between Ramaswamy and Huang, brought up four of the biggest challenges around AI adoption:

1 **Explainability.** One of the biggest challenges of foundation AI models is the ambiguity and lack of visibility into their training and data sourcing. With bespoke, in-house models built where the proprietary data is stored, there's a clearer view of data lineage — the data's origin, collection methods and any potential biases or limitations — which makes the model's decision-making process more interpretable.

2 **Data discrepancies.** Data processing errors, sampling biases and integration issues across multiple data sources are crucial problems for enterprise-class AI. Models powered by a single, unsiloed data source innately combat data-quality concerns. In-house training also creates opportunities for ongoing monitoring and feedback. Teams can track algorithmic biases added by the model itself, expose sampling bias, introduce an **opportunity to acquire external data sets through a marketplace or consider introducing synthetic data**.

3 **Talent.** A strong data foundation demands more than great tech. A new, fast-growing technology all but guarantees a shortage of people who know how to make the most of it. A major part of the solution is intentional, **organizationwide data literacy** efforts — both for the most technical workers and for the nontechnical teams who'll be benefiting from engaging with data insights using natural language rather than complex code.

4 **Cost.** Cloud-based platforms provide scalable and elastic computing resources on demand, allowing organizations to tap into the immense computational power required for training large AI models without the up-front capital investment in hardware and data centers. **Pay-as-you-go** data consumption and storage eliminate the need to overprovision resources, and the user only pays for what is consumed.

3. FROM ARCTIC TO UNIVERSAL SEARCH, SNOWFLAKE POWERS THE AI-DRIVEN ENTERPRISE

"It's easy to deliver a set of services and leave the hard job of integration to you," Ramaswamy said. "At Snowflake, we don't do that. We deliver a unified platform that makes the complex simple, sophisticated and powerful." Snowflake unlocks AI for everyone. Regardless of technical aptitude, users can improve or build custom chatbots with Cortex Search, or leverage Cortex AI to easily build and deploy AI-powered applications within the Snowflake AI & ML Studio. This allows for fine-tuning of best-in-class models, speeding up no-code AI development and more.

Here are the other key AI announcements, showcasing products that will allow customers to build industry-first applications and finally take advantage of unstructured data and more:

TALK TO YOUR DATA USING STATE-OF-THE-ART AI

Snowflake Cortex LLM Functions, now generally available, puts gen AI into the hands of every Snowflake user. The Cortex Analyst (public preview soon) allows developers to surface insights to business users with text-to-answer question prompting for analytical tables. Cortex Search (public preview coming soon) allows users to ask questions of documents and other unstructured text, while Cortex Fine-Tuning (public preview) supports secure and serverless customization of a subset of Meta and Mistral AI models. Users with access to the custom models will be able to use them just as easily as any **other Cortex-supported LLMs**.

To help ensure business users can efficiently build and leverage bespoke AI-powered applications that maximize their AI investments, Snowflake announced the adoption of NVIDIA AI Enterprise software to integrate NeMo Retriever — a collection of microservices that enable semantic search and retrieval of enterprise data, delivering highly accurate responses using retrieval-augmented generation — into Snowflake Cortex AI.

ESTABLISH MODEL SAFETY OUT OF THE BOX

Snowflake Cortex Guard (general availability soon) uses Meta's **Llama Guard**, an LLM-based input-output safeguard, to filter and flag harmful content across organizational data and assets, such as violence and hate, self-harm or criminal activities. With Cortex Guard, Snowflake is further unlocking trusted AI for enterprises by helping customers ensure that their models are safe and usable.

MAXIMIZING ON ACCESSIBILITY: ARCTIC NOW AVAILABLE THROUGH NVIDIA

No company is more synonymous with AI than NVIDIA. Together, Snowflake and NVIDIA are helping enterprises turn gen AI from an aspiration to a reality.

Snowflake built Arctic — a new, efficient, intelligent and truly open language model designed to understand and generate human-like text, based on the input — in three months for only $2M on NVIDIA GPUs. That's less than 1% of the cost of production, as compared to some of the most revered open source large language models on the market.

During his fireside chat with Ramaswamy, Huang explained that NVIDIA will help put Arctic into the hands of even more users through NVIDIA's NeMo Retriever, an inference microservice, and make the family of enterprise-grade models built by Snowflake available on ai.nvidia.com.

LEVERAGE PREBUILT AI-POWERED EXPERIENCES

With **Document AI** (in public preview), nontechnical business users can easily extract content, like invoice amounts or contract terms, from documents using Snowflake's industry-leading multimodal LLM, Snowflake **Arctic-TILT**, which beat GPT-4 and secured a top score in the DocVQA benchmark test — the standard for evaluating an ML model's ability to fully understand both the content and layout of document images.

Snowflake is further democratizing how any user can bring these powerful models to their enterprise data with the new Snowflake AI & ML Studio (private preview), a no-code interactive interface for teams to get started with AI development and productize powerful AI applications faster.

From increased interoperability, powered by Arctic, Streamlit and **Polaris Catalog**, to AI model sharing, Snowflake helps companies stay at the cutting edge of technology and AI.

> **We are an enterprise business, and our core ethos is efficiency. That's why when we launched Arctic, we paid a lot of attention to making this product very efficient to make and very efficient to run. For us, it's always a matter of creating value for our customers."**

—SRIDHAR RAMASWAMY,
CEO, Snowflake

4. SNOWFLAKE COMMITS TO OPEN SOURCE INNOVATION

Snowflake underscored its pledge to open source development with its release of Arctic. "The value of open source for innovation is undeniable," said Adrien Treuille, Director of Product for Generative AI at Snowflake and founder of Streamlit. "It allows a broader community of developers, students and brilliant minds outside the walls of your organization to influence outcomes and accelerate the speed of innovation."

Whether people recognize it or not, open source is foundational to most of the technology we depend on today, including Snowflake's start — cloud computing.

"I expect AI to be life-changing for all of us," Ramaswamy said in a recent LinkedIn live. "But private business interests have prevailed over community innovation, bringing developments to a lull."

He doubled down at Summit, explaining that the technology and development behind AI advancements are often too obscure.

"In making Arctic open source, we're committing to the opinion that the world will benefit more with better transparency, discoverability and ingenuity from people outside the organization's walls," Ramaswamy said. "We thought it was important for the thousands of students and professors who, let's face it, don't have a $3 million budget to be able to get their hands on the model training. It makes all of us better."

Here are the Snowflake product announcements underpinning our commitment to open source:

- **Polaris Catalog** supports flexibility for reading from and writing to a single copy of data from one centralized place with consistent security. Polaris Catalog can be deployed in customers' own infrastructure or in Snowflake, enabling users to switch between them while retaining all security controls.
- **Iceberg Tables** eliminate the need to move or copy data between different systems, reducing compute and storage costs in an open table format. Together with Polaris, Snowflake is extending the platform's ease of use, performance, governance and collaboration to data stored externally in the Iceberg format, unlocking full storage interoperability.
- **Snowflake Horizon** centralizes governance across regions and clouds to build a trusted and secure data foundation that accelerates success with gen AI and LLMs; unlocks the value of sensitive data with advanced privacy policies and data clean rooms; and helps classify, share, discover and immediately act on data, apps and more.

5. THE AI DATA CLOUD IS DRIVING SUCCESS FOR LEADING COMPANIES

"Snowflake's mission is to align AI initiatives with an enterprise's needs for secure, ethical and value-driven solutions that always put the end user first," Ramaswamy said.

CREATING A NEW WORLD OF INDUSTRIAL INNOVATION FOR SIEMENS

Siemens has played an integral role in day-to-day life worldwide for nearly two centuries. Its technology empowers customers to transform the industries that form the backbone of economies: industry, transportation, buildings and grids.

"There's a German saying we commonly use that roughly translates to, 'If Siemens only knew what Siemens knows.' It refers to unlocking the potential of our collective knowledge to make Siemens more agile, more insightful and more connected than ever before. Today, with Snowflake, we're closer than ever to truly knowing what Siemens knows."

—DIETMAR MAUERSBERGER,
VP of Data, Siemens

As the world evolves, Siemens evolves with it. The technology titan has transformed itself into a booming digital business and met the challenges of AI head-on.

The organization is building an "Ask Snowflake" chatbot to let more than 85,000 data consumers use natural language to extract insights from any Siemens data housed in Snowflake. Within seconds, users will gain answers to vital business questions ranging from "Which product has the best margins?" to "What are potential risks to production timelines?" These insights will deepen the use of data across the enterprise and sharpen Siemens' competitive edge with every decision the company makes.

For more on Siemens' evolution from a 19th-century manufacturer to a digital leader on the cutting edge of tech — including AI, check out the **Platform Keynote from Summit.**

STANDING AT THE FOREFRONT OF TECHNOLOGY WITH ZOOM

Zoom's mission is to be one platform delivering limitless human connections. During the Product Keynote at Summit, the global communications giant, used by more than 500 million daily meeting participants, explained why it bet on the AI Data Cloud to get its foundation right. Then, it built advanced analytics, machine learning and AI use cases.

By combining Snowflake Cortex AI and Streamlit, Zoom quickly builds applications using pretrained LLMs to empower its sales teams through natural language chatbots to derive account-specific insights quickly. This facilitates the democratization of AI across the organization while prioritizing data security and governance.

For more from Zoom, check them out during the Product Keynote **on demand.**

WATCH SUMMIT ON DEMAND

Forward-Looking Statements
This ebook contains forward-looking statements, including about our future product offerings, and are not commitments to deliver any product offerings. Actual results and offerings may differ and are subject to known and unknown risk and uncertainties. See our latest 10-Q for more information.

ABOUT SNOWFLAKE

Snowflake makes enterprise AI easy, efficient and trusted. Thousands of companies around the globe, including hundreds of the world's largest, use Snowflake's AI Data Cloud to share data, build applications, and power their business with AI. The era of enterprise AI is here.

Learn more at **snowflake.com** (NYSE: SNOW)