Part-I

Snowflake & GenAI Capabilities

GenAI Introduction: General Artificial Intelligence (Gen AI) refers to a hypothetical AI system that possesses the ability to understand, learn, and apply knowledge across a wide range of tasks, domains, and contexts, at a level equal to or beyond human capability. In other words, Gen AI would be a machine that can perform any intellectual task that a human can, and potentially even surpass human-level performance. Generative AI (GenAI) is a powerful tool that can generate unique content and solve complex problems.

Generative AI is unlocking new ways to drive innovation, improve productivity and derive more value from data.

Technically, GenAI is an open-source, Python-based library for generative modeling. It provides a range of tools and algorithms for building and training generative models which is designed to be user-friendly and modular, allowing users to easily build and customize generative models.

There could be wide variety of use cases for GenAI like mentioned below :

Data search and discovery : The AI approach would have users asking direct questions that a large language model (LLM) then uses to quickly analyze an application's underlying data model and precisely pinpoint the right data asset or data insight.

Content Generation: Generative AI models can be used to generate realistic and novel content across various domains, like Image Generation,Text Generation,Music Generation etc

Data Augmentation: Generative models can be used to create synthetic data to augment existing datasets, which can help improve the performance of machine learning models, especially in scenarios with limited labeled data.

Anomaly/Fraud Detection: Generative models can learn the normal patterns or distribution of data and identify anomalies or outliers that deviate significantly from the learned patterns.

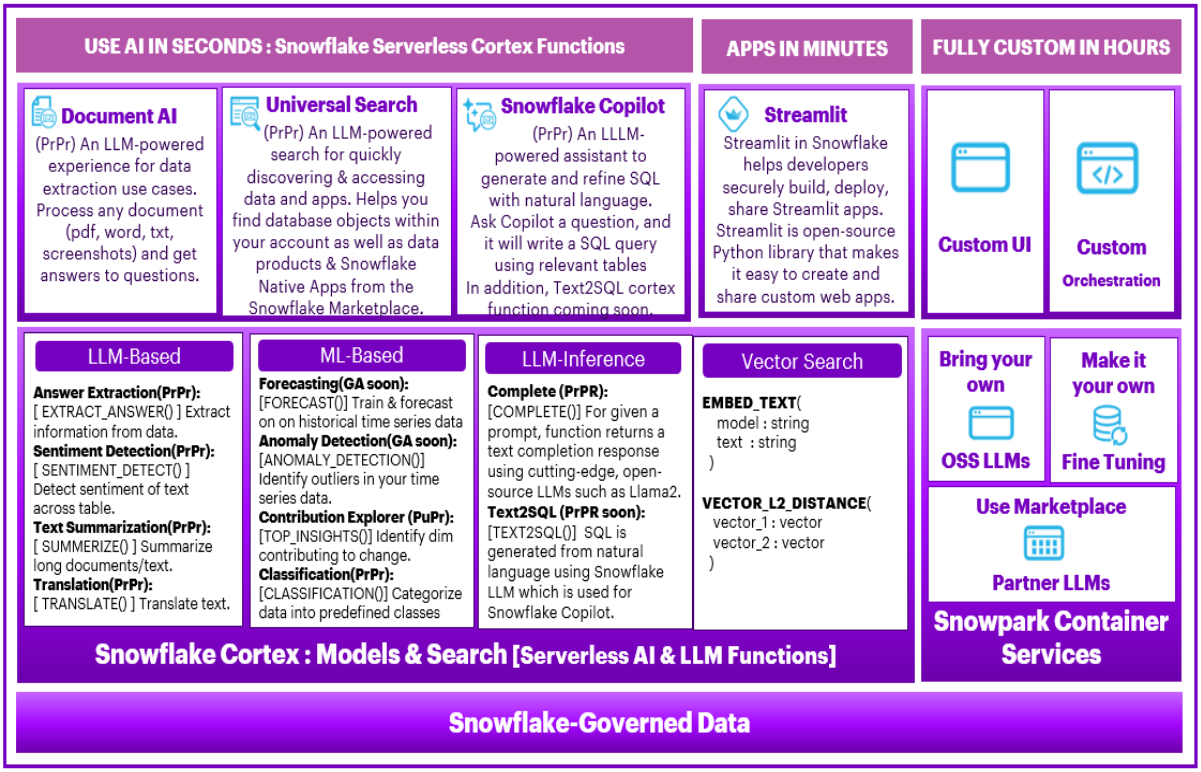
Defining Predictive AI : Predictive AI focuses on analyzing existing data to make informed predictions and forecasts. By employing machine learning (ML) algorithms, predictive AI can identify patterns and trends in large datasets, enabling businesses to make data-driven decisions and anticipate future outcomes.

Customer Service Automation using Chatbots/Automated Responses/Virtual Assistants: GenAI provides conversational agents and virtual assistants, providing natural language understanding and generation capabilities. It can engage in human-like conversations, answer queries, and assist users with tasks.

Documentation Analysis : GenAI plays a vital role in improving business processes by analyzing unstructured data, such as emails and documents, to extract relevant supply chain information. By applying NLP techniques, GenAI can understand and interpret textual data, enabling businesses to gain valuable insights and make data-driven decisions.

Lets see how snowflake is evolving around GenAI capability. Snowflake has brought in Cortex functions which is Snowflake's new, intelligent, fully managed service that enables organizations to quickly analyze data and build AI applications, that to all within Snowflake. As part of Snowflake Cortex, snowflake users are enabled with industry-leading AI models, LLMs and vector search functionality .
With Snowflake Cortex, Snowflake users now have access to a set of serverless functions that easily accelerate everyday analytics and AI app development. With just a single line of SQL or Python, analysts can instantly access specialized ML and LLM models tuned for specific tasks. Since these are fully hosted and managed by Snowflake Cortex, users always have access to them without the need to bring up and manage expensive GPU infrastructure.

Below diagram illustrate an overview of GenAI and LLM capabilities in Snowflake.



Reference:

https://medium.com/@sameergaware/snowflake-genai-capabilities-2b40b5a2f92c