Artificial Intelligence as a Service (AIaaS)

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What is Artificial Intelligence as a Service (AIaaS)?

Artificial Intelligence as a Service (AIaaS) is the third-party offering of artificial intelligence (AI) outsourcing. It enables individuals and companies to experiment with AI for various purposes without a large initial investment and with lower risk.

AIaaS provides out-of-the-box platforms and is easy to set up, making it simple to test out various public cloud platforms, services and machine learning (ML) algorithms.

What is AI (Artificial Intelligence)?

How does AI work?

AI encompasses a variety of technologies, including robots, computer vision, cognitive computing, ML models and natural language processing (NLP).

Machine learning algorithms — the primary tool used in AI — are a collection of guidelines or methods that are applied, generally by a computer, to compute or solve a problem. The typical methods computers use to solve problems or provide decision-making capabilities include either extensive data analysis or the creation of generalizations and statistical forecasts.

The benefits of using AIaaS platforms

Organizations can execute AI at a reasonable cost using the AIaaS delivery model without having to develop or maintain a single AI project. AIaaS platforms enable organizations to build customized AI services that are adaptable, scalable and simple to use.

Quick deployment.

AIaaS is one of the quickest ways to introduce AI to an organization. It's easy to install and set up. Because there are a variety of AI use cases, it isn't always feasible for a business to create and maintain an AI tool for each one. Customizable options are especially useful, as organizations can deploy AI services quickly and tweak them according to their business needs and constraints.

Low- to no-code skills required

AIaaS can be used even if a company lacks an in-house AI developer or programmer. All that's required is a layer of no-code infrastructure in the enterprise, as generally no coding or technical expertise is needed during the setup process.

Cost-savings

Saving money is the main factor influencing the expansion of AIaaS in the IT industry. AIaaS is cost-effective for businesses because they only pay for usage and AI functionality and don't need to make sizable upfront investments.

Price transparency

In addition to reducing non-value-added labor, AIaaS also offers access to AI with a high level of transparency with service fees. Because most AIaaS pricing structures are based on consumption, businesses only pay for the AI technologies they use.

Scalability

AIaaS is well-suited for companies looking to scale. It's ideal for tasks that don't add significant value yet need some level of cognitive judgment. Because AIaaS employs Industrial automation to complete simple tasks without requiring human intervention, team members have more time to focus on other tasks.

What are the challenges of AIaaS?

Price

Purchasing the required hardware and software to start a private cloud computing AI is costly. Add staffing and maintenance costs, as well as needed hardware changes for different tasks, and AIaaS becomes cost prohibitive for many organizations.

Transparency

The majority of AIaaS platforms provide users access to the provider's services but offer little to no transparency into their internal operations.

Security

Data security is a major concern with AIaaS, as data is the basis of AI and businesses must share data with outside vendors. However, data masking and other privacy-enhancing techniques are designed to safeguard an organization's data.

Data governance

Businesses must tightly enforce limits on cloud data storage in highly regulated industries. For example, organizations in the banking and healthcare sectors might find AIaaS challenging to use because they could encounter restrictions such as limitations on how data can be stored, shared and used in the AIaaS platform.

Vendor lock-in

If a company's needs aren't being met by one AIaaS provider, switching to another can be challenging. This is because various AI providers employ different response styles and vendor lock-in agreements. The transition might also be time-consuming for team members because they would need to learn the new program from scratch.

Types of AIaaS

Different AI provider platforms offer several styles of machine learning and AI. These variations can be suited to an organization's AI needs, because they need to evaluate features and pricing to see what works for them. Cloud AI service providers can offer the specialized hardware needed for some AI tasks, such as GPU-based processing for intensive workloads.

Bots

What is a Bot? See Description

Bots and chatbots are widely employed across all industries. They use NLP to mimic real human speech and are generally used in customer service to provide relevant answers to customers' most frequent queries. Companies save time and resources by responding around the clock and enabling employees to focus on more challenging tasks. A study conducted by AI provider Tidio found that 62% of consumers would rather use a customer service chatbot than wait for human agents to respond to their inquiries.

Machine learning

Businesses use ML to investigate and identify trends in their data, make predictions and learn as they go. This data processing technique is intended to run with little or no human intervention, empowering businesses to employ AIaaS without specialist technical skills. ML comes in a variety of options, from pretrained models to models designed for a particular use case.

Application programming interfaces (APIs)

An API is a software bridge that enables communication between two applications. An example of this is a third-party airline booking website — such as Expedia, Kayak or CheapOair — that uses information from several airline databases to display all of their deals in one convenient location. Other common uses for APIs include machine vision, conversational AI and NLP applications such as urgency detection or sentiment analysis.

Data labeling

Data labeling is the process of annotating huge amounts of data to efficiently arrange it. It has numerous uses, such as guaranteeing data quality, categorizing data according to size and creating AI. The data is labeled using human-in-the-loop machine learning, which enables both humans and machines to interact continuously and makes it easy for AI to evaluate the data in the future.

Vendors of AIaaS

AI platforms, including Amazon Machine Learning, Microsoft Azure Cognitive Services and Google Cloud Machine Learning, can help organizations determine what might be possible with their data. Before committing, organizations can learn what works and enable scaling by testing the algorithms and services of different providers. When a platform is found that scales to requirements, the resources of these large providers can back up the needed scaling with compute capacity.

Amazon Web Services (AWS)

AWS is a platform that offers multiple cloud services and more than 200 services across the globe. AWS provides several products for common use cases for machine learning and AI, including Amazon SageMaker and Amazon Alexa. Customers, companies and individuals with impairments all benefit from these Amazon AI services.

Anolytics

Anolytics is an AIaaS platform for data annotation that offers outsourcing services for ML and AI models.

Google AI

Google Cloud provides many AI and machine learning tools, such as the Tensor Processing Unit (TPU), which accelerates AI model training. To expedite the development process, Google also offers several other AI technologies, including Google Lending DocAI, which automates the processing of mortgage documents.

IBM Watson

Businesses can select from a variety of prebuilt apps from IBM Watson, including Watson Assistant for creating virtual assistants and Watson Natural Language Understanding for performing complex text analysis tasks. No prior knowledge of data science or machine learning is required and developers can also create, train and deploy ML models across any cloud using IBM Watson Studio.

LivePerson

LivePerson is a SaaS startup that uses the LivePerson Conversational Cloud. It enables the integration of systems for voice, email and messaging customer experiences and aims to use intent discovery to inform brands about what their customers want.

Microsoft Azure AI

Data scientists, engineers and machine learning experts frequently use Microsoft Azure machine learning and AI platforms. One such platform is the cloud-based service called Azure NLP, which aids in interpreting and analyzing texts. Python and R language support are also available through Azure. Microsoft Azure offers prebuilt libraries, specialized code packages and other AIaaS offerings, including conversational AI and Azure Cognitive Services.

ServiceNow

One of the most popular services offered by ServiceNow is AIOps, which is an artificial intelligence platform that's designed to help simplify IT operations. With products such as AI Contact Center and AI Customer Care, ServiceNow also offers choices for digital security.

SAS

SAS is an AI-driven analytics platform that uses AI to handle big data and manage and retrieve data from various sources. The company also offers services in NLP and visual data mining and provides an easy GUI through the SAS language.

Future of AIaaS

Global market research company Market Research Future published the report titled "AI as a Service Market Information by Technology, by Vertical and Region — forecast to 2030" that projects the AIaaS market will hit $43.29 billion (USD) by 2030, expanding at a compound yearly growth rate of 25.8%.

Early adopters are drawn to AIaaS because it has many benefits and is a rapidly expanding industry. Its shortcomings show that there's still room for improvement, but despite potential roadblocks to its development, AIaaS is predicted to be just as significant as other as-a-service products.

In many aspects, AI technology outperforms humans, but the human brain remains unmatched. Learn about the four primary types of AI and what they entail.