Magic Quadrant for Cloud AI Developer Services

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Initiatives: Software Engineering Technologies; Adopt Modern Architectures and Technologies; Artificial Intelligence

> Software engineering leaders are eager to deliver predictive, intelligent capabilities for application users, but their teams may lack the skills. Cloud AI developer services offer teams support and acceleration to gain value from AI advancements in generative, language, vision and autoML.

This Magic Quadrant is related to other research:

Critical Capabilities for Cloud AI Developer Services

View All Magic Quadrants and Critical Capabilities

Market Definition/Description

Gartner defines cloud AI developer services (CAIDS) as cloud-hosted or containerized services that enable software developers who are not data science experts to use artificial intelligence (AI) models via APIs, software development kits (SDKs) or applications. Core capabilities include automated machine learning (autoML), automated data preparation, feature engineering, automated model building and model management. Optional and important complementary capabilities include language and vision services such as sentiment analysis and image generation.

Our view of the CAIDS market focuses on each vendor's ability to deliver on the future needs of end users. Vendors that offer only language services or vision services — as well as vendors that specialize only in specific use cases — were excluded from this Magic Quadrant.

Magic Quadrant

Figure 1: Magic Quadrant for Cloud AI Developer Services

Vendor Strengths and Cautions

Alibaba Cloud

Alibaba Cloud is a Challenger in this Magic Quadrant. Alibaba Cloud's product offering spans language, vision and autoML services. The company delivers these services via prebuilt models that developers can easily customize. These models include services for large verticals, such as banking, finance, insurance, education, government and healthcare, as well as several other smaller industries.

Alibaba Cloud is a subsidiary of Alibaba, a public company with 48 global offices that is headquartered in Hangzhou, China. It has a small presence in Europe, the Middle East and Africa (EMEA) and North America, but its operations are primarily in China and other southeast Asia/Pacific countrie

Strengths

- **Innovation:** Alibaba Cloud's CAIDS offering is highly customizable, often enabling the use of low-code tools and SDKs. Alibaba's ModelScope platform offers many prebuilt models that developers can easily modify to suit a wide variety of use cases across its language and vision services. Few-shot learning techniques further enhance these capabilities. Its structBERT language model also enhances the company's language services. Alibaba Cloud offers exceptionally strong translation capabilities, with support for more languages than any other provider.
- **Market understanding:** Alibaba Cloud's portfolio is clearly driven by customer demand, as evidenced by its vision offering that focuses on major verticals, such as retail, media and logistics. The company continues to enhance its CAIDS portfolio and makes it easy for customers to tailor services to their use cases without needing data science skills. For example, Alibaba Cloud's image generation capabilities are easy to use and can customize a sample image to fit specific use cases.
- **Overall viability:** Alibaba Cloud is a wholly owned subsidiary of Alibaba, a multinational conglomerate. The company has extensive resources to enter any market and pursue any opportunity. It also has the discipline to ensure that it can offer a comprehensive set of products and services before expanding into new markets or regions.

Cautions

- **Product strategy:** The platform can be challenging for developers to navigate. The comprehensiveness of the Alibaba Cloud CAIDS offering adds a level of complexity.

- **Geographical strategy:** Alibaba Cloud has limited coverage outside China, the Middle East and Asia/Pacific. This narrow geographical focus is also reflected in some of the product limitations in its language services. Although its translation capabilities are very strong, its other language services and its product documentation support a relatively limited number of languages.
- **Marketing execution:** Alibaba Cloud has strong marketing execution in China, but a minimal marketing presence outside the country. Though this strategy is a conscious choice by Alibaba Cloud, customers outside China may lack awareness of Alibaba's offerings.

Amazon Web Services

Amazon Web Services (AWS) is a Leader in this Magic Quadrant. Its CAIDS offering, which includes Amazon SageMaker and other popular language and vision services, is designed to automate the full AI and ML cycle from development to operations. AWS enables developers to build solutions on their own, with the assistance of dedicated AWS personnel, solution architects or consulting partners.

AWS is headquartered in Seattle, Washington, and has a strong global presence in the CAIDS market, with customers across all industries. AWS can be an attractive choice for production workloads due to its low operational costs and the breadth of its AI services and infrastructure choices.

Strengths

- **Sales execution and pricing:** AWS's approach to sales and pricing has attracted hundreds of thousands of customers to its CAIDS offering. In 2022, AWS introduced the AI Use Case Explorer that augments the AWS Solutions Library and solution architects to help customers and prospects select the right AI solutions for their industry and business-specific needs. AWS's CAIDS offering is competitively priced — there are no minimum fees or upfront commitments — and customers pay only for what they use.
- **Geographical strategy:** AWS offers an extensive global cloud infrastructure. Its Availability Zones provide greater coverage than any of its competitors, and AWS makes it easy for customers to deploy their models across multiple Availability Zones. Its CAIDS offering is available in the Americas, EMEA and Asia/Pacific. AWS also offers language and autoML services in China. It plans to expand into Thailand and increase its presence in Australia and New Zealand.

- **Overall viability:** AWS is a large multinational company with ample resources to expand its offerings to customers in all markets and regions. AWS's parent company, Amazon, reported that its net sales had increased by 9% to $514.0 billion in 2022, while AWS sales increased by 29% year over year (YoY) to $80.1 billion.

Cautions

- **Product strategy:** Though it has recently announced plans for a multicloud solution, AWS currently offers few options for customers seeking multicloud. If cloud portability is high among customers' priorities, they should consider vendors that can run natively on various clouds.
- **Innovation:** AWS CAIDS users may need to augment their efforts with open-source software, leverage the recently announced Hugging Face partnership or visit the AWS Marketplace for popular ML products and services. An increase in research and development by AWS would boost its innovation and provide more visibility.
- **Market responsiveness:** Although AWS's new AI Service Cards for Amazon Rekognition face matching, Amazon Textract AnalyzeID and Amazon Transcribe are excellent steps toward strengthening its responsible AI, it only provides three AI Service Cards at the time of writing. Since 2022, AWS has made progress in providing fairness, robustness and explainability capabilities with Amazon SageMaker Clarify and Model Monitor, but customers seeking turnkey responsible AI features may need to look into custom options.

Baidu

Baidu is a Challenger in this Magic Quadrant. Baidu offers an extensive range of AI services for autoML, language and vision functions. It is headquartered in Beijing, China, and its operations and clients are also mostly based in China. Its Baidu Brain services support both its internal and commercial AI services.

Baidu has more than 1,300 employees who focus on the commercial CAIDS portfolio. Baidu's AI Technology Group and AI Labs have about 2,000 employees, who develop technologies such as Ernie (a large language model), PaddlePaddle (an open-source deep learning platform), AI chips, DuerOS (a virtual assistant) and Baidu Apollo (for autonomous driving).

Strengths

- **Innovation:** Baidu plans to launch a generative AI and ChatGPT-style product called Ernie Bot for users in China. Baidu provides a wide range of innovative features, including autonomous driving, multimodal foundation models, quantum computing, graph computing and metaverse.
- **Sales execution and pricing:** Baidu offers competitive prices compared with its competitors. It also offers comprehensive learning courses, an open-source platform (PaddlePaddle), data and free computing power to developers so that they can explore ideas via AI Studio. These features have led to a 60% increase in the number of paid users during 2022.
- **Business model:** With its "Believing Everyone Can AI" vision, Baidu aims to provide every developer with access to open-source AI technologies. The company is supporting this vision by fostering strong developer communities for PaddlePaddle (with more than 5 million developers) and via a partnership with the AI company Hugging Face, which began in 2022.

Cautions

- **Geographical strategy:** Baidu's AI solutions are geared primarily to developers in China. Some of its natural language offerings, like text analytics and sentiment analysis, are available only in Chinese. Its lack of non-Chinese language support may limit its appeal to customers outside China.
- **Product strategy:** Baidu's business scale of data management solutions sold to the enterprises, such as database and data lake, is not as big as its direct competitors in China. Baidu's relatively low data gravity may make it difficult for the vendor to stand out in this market.
- **Marketing strategy:** Baidu is not actively promoting responsible AI in its marketing messages, and thus has limited visibility to customers. Its planned launch of Ernie Bot, which includes enhanced bias detection and model explainability capabilities, will help, but is late compared with Leaders in this Magic Quadrant.

Clarifai

Clarifai is a Niche Player in this Magic Quadrant. The company is best known for its vision services and has been a strong provider in that area. However, its CAIDS offering and roadmap span language, vision and autoML use cases. Clarifai is headquartered in Wilmington, Delaware. Its operations are geographically diversified, and it plans to expand its employee presence in North America, EMEA and Asia/Pacific. Its clients tend to be midsize and large enterprises from all major sectors.

Clarifai's sales strategy is focused on five verticals: public sector, retail, media and entertainment, manufacturing, and transportation. It is still a midstage startup and is not yet profitable.

Strengths

- **Market understanding:** As a pure-play CAIDS company, Clarifai has established two clear focuses that align with market demand. First, Clarifai provides developers with features to build AI-enabled business applications, including generative AI, APIs, accelerators, customizable pretrained models and end-to-end machine learning operations (MLOps) features. Second, Clarifai's offering helps to increase developer productivity through automation.
- **Product strategy:** Clarifai plans to strengthen its offering further in 2023. Its roadmap includes ChatGPT's derived generative language services, workflows that combine text-to-audio with other NLP services, and joint embedding of vision and language for search and multimodal tasks. It also plans to release synthetic data generation, distributed training capabilities for deep-trained models and one-click training with autopilot mode.
- **Vertical/industry strategy:** In 2022, Clarifai attained new certifications for its CAIDS offering, including Service Organization Control (SOC) 2/SOC 3 and General Data Protection Requirement (GDPR). This demonstrates a further maturation of its product to support regulated industries. Across verticals, Clarifai's customer growth has averaged 16%. This is reinforced by its investments in industry-focused solutions, such as intelligence surveillance and reconnaissance, visual inspection, video analysis for commercial real estate, and content moderation for media and entertainment.

Cautions

- **Overall viability:** Clarifai is a relatively small, venture-funded company that is competing with the cloud giants. Although Clarifai plans to expand its employee presence in North America, EMEA and Asia/Pacific in 2023, it must accelerate its investments in sales and support to scale up to the needs of large enterprises.
- **Geographical strategy:** Clarifai's geographic reach is not comparable with Leaders in this Magic Quadrant. Its modest investment will not be sufficient to effectively build customer awareness in all regions.
- **Operations:** Clarifai's employee headcount is low compared with that of its competitors. Large enterprises must work closely with Clarifai to ensure they get the level of support they expect.

Google

Google is a Leader in this Magic Quadrant. Google Vertex AI offers language, vision, structured data and autoML services on the Google Cloud Platform (GCP). Google continues to improve the Vertex AI machine learning platform, including new enhancements that have improved both usability and accessibility for developers.

Since 2022, Google has added new solutions aimed at specific verticals including education, government, life sciences, and transportation and logistics. It complements these vertical offerings with targeted solutions, such as COVID-19-centered offerings, and with horizontal solutions called Contact Center AI and Document AI. Google continues to see strong revenue and share growth for Vertex AI, and it remains a leader in AI research and responsible AI.

Strengths

- **Market responsiveness/record:** Google Cloud's Vertex AI continues to gain momentum as the company enhances the capabilities of its services. The addition of more low-code tools makes the platform easier for non-data-scientists to use. GCP also continues to focus on targeted vertical markets and major accounts where Google services are well-received.
- **Overall viability:** Google has extensive resources that it can devote to its CAIDS portfolio. The company has built out one of the strongest portfolios of language, vision, structured data and autoML services. Google offers individual prebuilt autoML services for language, structured data and vision, including both image and video. Google's DeepMind and Google Research advance AI via deep learning, unsupervised learning and generative AI, which will position the company to capitalize on advances in AI technology by quickly building them into enterprise-ready services for their customers.
- **Sales execution and pricing:** The restructuring of the Google Cloud organization over the past few years is delivering results. The organization is focusing on named accounts and offerings tailored to selected verticals. As a result, GCP's offerings are gaining traction in the market. In addition to its own vertical solutions, Google has partnered with C3.ai and many other partners to deliver a portfolio of partner solutions to its customers.

Cautions

- **Customer experience:** Google's customer experience scores are still maturing as the company continues to invest in its sales and support functions. Recent organizational changes include the hiring of new leaders from other hyperscalers and ISVs.
- **Marketing strategy:** Google has been less aggressive than other CAIDS providers in terms of promoting its offering. Google appears to have become more cautious in its approach to marketing as a result of public discourse regarding its AI practices.
- **Vertical/industry strategy:** Google has recently expanded the number of industries served by its GCP portfolio inclusive of its CAIDS services. Market awareness is still maturing and Google's success with its new, vertical-specific solutions is yet to be seen.

H2O.ai

H2O.ai is a Visionary in this Magic Quadrant. H2O AI Cloud offers end-to-end AI life cycle development, management and deployment of AI models and applications. Its platform provides language, vision and autoML services that can run in the cloud, on-premises, and in edge and hybrid environments. H2O.ai has customers in most industries. It remains a thought leader in autoML across structured, time-series, image, video, audio, text and document data.

The company is a major open-source contributor, with 20,000 companies supporting H2O.ai's open-source offering and more than 1 million users. H2O.ai invests resources into AI for Good in order to solve global problems, such as conservation issues and natural disasters.

Strengths

- **Market responsiveness/record:** H2O.ai continues to innovate its CAIDS offerings. Over the past 12 months, H2O.ai has enhanced its core AI engines: Hydrogen Torch for deep learning, Document AI for unstructured data use cases and Driverless AI for greater accommodation of developers and data scientists. H2O.ai also emphasizes responsible AI by offering guardrails to protect against common ML pitfalls, including automatic model validation and model monitoring to ensure trust.

- **Market understanding:** H2O.ai co-creates AI products with its customers. It brings its technology, AI expertise, go-to-market support, training and enablement, while customers contribute their domain acumen and data. For example, H2O.ai has co-created, with AT&T, the AI Feature Store, an in-database model deployment process with Snowflake, a solution for generating synthetic training data to protect privacy with Subsalt and fintech apps with the Commonwealth Bank of Australia. H2O.ai has also prioritized vertical solutions for healthcare, financial services, business operations and customer service.
- **Offering (product) strategy:** H2O.ai helps developers to quickly build accurate, transparent AI models and applications with features such as model validation, a no-code deep learning framework in H2O Hydrogen Torch, and zero-shot and embedding models for unsupervised image and text data exploration.

Cautions

- **Marketing execution:** Most H2O.ai customers are data scientists, and only 25% are developers. H2O.ai's offering should be attractive to developers due to its easy-to-use SDK, interface, workflow and API experience, but its marketing efforts are not sufficient to attract more developers.
- **Operations:** H2O.ai has invested to match the growth it is experiencing in Latin America, Australia and Singapore. H2O.ai's community support and self-service work well for users who are competent in ML, but most developers need additional guidance.
- **Sales execution:** The vendor's Cloud AI Units are designed to accommodate the difference in consumption for training and inference, but this model could be confusing for customers. However, customers have an option of server-based licensing, and the ever-evolving H2O.ai open-source platform is free.

Huawei Cloud

Huawei Cloud is a Niche Player in this Magic Quadrant. Its platform provides language, vision and autoML services that can run in its public cloud, on-premises and in edge and hybrid environments. Based in Guangdong, China, Huawei Cloud's operations are concentrated in China, although it does have a presence in Southeast Asia and EMEA.

Huawei Cloud has more personnel dedicated to CAIDS than most of its competitors, and it has a solid record for its operations and marketing execution. It is a thought leader in industry-specific foundation models, enterprise knowledge management and intelligent decision making. Few vendors offer language services for Arabic, but Huawei Cloud has one of the most comprehensive sets.

Strengths

- **Overall viability:** Huawei Cloud runs a profitable CAIDS business, and most of its sales result from organic customer growth. It continued to expand its partner relationships in 2022 and now has hundreds of partners, with plans to continue to expand in 2023. Its revenue grew by double digits in 2022, with a similar growth rate projected for 2023.
- **Marketing execution:** Huawei Cloud leads developer-focused events such as domestic and international conferences, exhibitions and university programs. Its focus on a seamless, end-to-end developer experience is driving a high rate of adoption among engineers. Its thought leadership on enterprise knowledge management and acceleration of decision making using its AI and ML capabilities are resonating with its potential customers.
- **Operations:** Huawei Cloud offers world-class operational SLAs of 99.9% availability, with response times as low as 15 minutes, depending upon the scale and severity of the incident. It has hundreds of support and operations personnel dedicated to the platform.

Cautions

- **Market understanding:** Huawei Cloud does not emphasize or advocate for the responsible use of AI as much as Leaders in this Magic Quadrant. Customers should ensure that the Huawei Cloud models they use and develop have acceptable levels of bias, per their organization's requirements.
- **Geographical strategy:** Huawei Cloud is available in only a few countries and has a much smaller geographic reach than Leaders in this Magic Quadrant. Furthermore, not all CAIDS (language, vision and autoML services) are available in every country where Huawei Cloud is available. Customers should evaluate which of the three use cases are available in the countries where they need to deploy services.
- **Vertical/industry strategy:** Huawei Cloud does not have the breadth of prebuilt industry-specific services and models as Leaders in this research. Customers should evaluate Huawei Cloud's offering to ensure it meets their industry-specific needs.

IBM

IBM is a Leader in this Magic Quadrant. Its Watson AI services and capabilities span all three CAIDS use cases. IBM has continued to improve the integration between its industry-leading research division and its product organizations to ensure that IBM innovations are added to products in a timely fashion.

Headquartered in Armonk, New York, IBM's operations are global, with customers across all industries and more than 300 physical offices. IBM has a strong presence in vertical markets and is especially strong in responsible and trustworthy AI. It leads with a true hybrid cloud strategy that appeals to most customers.

Strengths

- **Product or service:** Watson Discovery and Watson Natural Language Understanding provide strong capabilities for answering questions and generating narratives. IBM's vision services are competitive, especially its video content analysis capabilities. Maximo Visual Inspection includes deep-learning models that learn to analyze video streams for classification and to detect objects, action and anomalies. In addition to autoML support in Watson Studio AutoAI, IBM provides developers with responsible AI capabilities, including data quality, model lineage, model monitoring, drift, bias detection and explainability.
- **Market understanding:** IBM's CAIDS portfolio delivers a strong set of capabilities to address a wide range of customer needs. Its user-friendly tools enable developers to deploy embedded AI services in any environment, including public clouds, on-premises and at the edge. IBM's CAIDS offering also provides low-code and no-code tools that enable developers and citizen developers to rapidly build and deploy AI solutions.
- **Operations:** IBM's highly trained global technical support team provides 24/7 support. IBM provides best-in-class operational SLAs of 99.995% availability, with response times of less than 15 minutes for high-severity issues.

Cautions

- **Sales strategy:** IBM's sales strategy is driven by its existing partner relationships. In 2022, IBM launched IBM Partner Plus, a program that provides significant access to IBM competitive incentives, greater insider access and enhanced support.

- **Market responsiveness:** IBM's offering is fairly comprehensive, but it has some gaps in its image generation and image labeling services. Its offering lacks crowdsourcing and synthetic data creation capabilities, as well as automated building of image and video content analysis models.
- **Sales execution and pricing:** IBM offers an extensive range of deployment options that may have unclear costs. Customers should carefully assess the full cost implications for nonstandard deployments.

Microsoft

Microsoft is a Leader in this Magic Quadrant. Its Azure AI platform has a comprehensive offering for all three use cases: language, vision and autoML. Based in Redmond, Washington, Microsoft's operations are global, and it has customers across all industries. Professional developers can consume its services via APIs and SDKs.

Microsoft leads the industry by responding to market demands faster than its competitors, building a compelling business model and structuring a tiered pricing model that encourages enterprises of all sizes to build AI-powered applications.

Strengths

- **Business model:** Microsoft customers can access and extend a wide range of prebuilt models from Microsoft, OpenAI (via its exclusive agreement) and Hugging Face. It also provides customers with an extensive network of global partners. Microsoft's internal use of CAIDS across its product lines enables it to improve product quality and release features faster than its competitors.
- **Sales execution and pricing:** Microsoft offers a free version of Azure AI, a pay-as-you-go tier for small teams, and discounted subscription plans for large enterprises (with fixed monthly or annual commitments). Microsoft offers its autoML capabilities for free, charging only for compute and storage. Microsoft also employs AI solution architects as part of its sales team. These "AI rangers" create successful, deployable proofs of concept.
- **Market responsiveness/record:** Microsoft continues to productize AI innovations for enterprise markets faster than its competitors. In addition to Microsoft's own AI products, customers can leverage marketplace solutions, which grew at a triple-digit rate in 2022. Microsoft also supports developers by providing free online courses, videos, tutorials and documentation. Microsoft is a leading contributor of open-source software (OSS) code, including SDKs for developing AI applications responsibly, and its subsidiary GitHub hosts most of its AI/ML OSS code for free.

Cautions

- **Vertical/industry strategy:** Microsoft has improved its industry coverage, but its model strategy and selection of vertical offerings are less comprehensive than those from other vendors. Customers should evaluate the depth and breadth of Azure AI's prebuilt models in their business domain.
- **Customer experience:** Customer ratings for Microsoft's services have improved from last year, but remain lower than those of some other Leaders in this Magic Quadrant. To avoid frustrating its developer base, Microsoft needs to consolidate its CAIDS offerings into a single offering and respond better to requests for new features.
- **Operations:** Microsoft's SLAs do not guarantee latency limits for CAIDS. This can be problematic when these services are embedded in mission-critical, real-time applications and when the workloads are computationally expensive. Also, Microsoft provides a maximum of 25% of service credit back for any CAIDS downtime below 99% uptime, while some other Leaders provide 100% of service credit to their customers in this scenario.

Oracle

Oracle is a Niche Player in this Magic Quadrant. Oracle has released new services for speech, vision, document and translation, and has added multiple capabilities across the stack (custom language, for example). Oracle is headquartered in Austin, Texas. Its operations are global, and it has customers across all industries.

Oracle's primary strengths are in its autoML services, especially its responsible AI capabilities and model deployment flexibility (including support for hybrid, cloud and on-premises deployments).

Strengths

- **Industry/vertical strategy:** Oracle offers solid support for prebuilt and industry-specific models. It also offers packaged AI solutions, such as OCI Anomaly Detection, which supports use cases such as fraud detection, marketing effectiveness, threat identification and root cause analysis.
- **Geographical strategy:** Over the past year, Oracle has added support for more languages to its services, including sentiment analysis and translation services. Its vision, language and autoML services are available in the Americas, EMEA and Asia/Pacific.

- **Overall viability:** Oracle's 2022 revenue exceeded its 2021 revenue, and its 2Q23 revenue is outpacing its 2Q22 revenue. Oracle's acquisition of Cerner Corporation is expected to bolster its position in the healthcare data science market for years to come.

Cautions

- **Market responsiveness/record:** Although Oracle improved its CAIDS offering from last year, some services were not available as of January 2023, including generative capabilities, text-to-speech, and champion/challenger analysis of production models, as examples.
- **Product or service:** Although Oracle offers competitive AI services, there are areas that need improvement to better compete in the CAIDS market. To remain competitive, Oracle must quickly expand its language services to include text-to-speech and generative text capabilities and to improve its vision services in the areas of labeling and generative AI.
- **Business model:** Oracle's recent Java licensing changes and audits have become problematic for some enterprise IT leaders and their procurement offices. Potential buyers will need to effectively prove the value of Oracle CAIDS to navigate the procurement climate.

Tencent

Tencent is a Niche Player in this Magic Quadrant. It is well-known for its technology and capabilities, such as WeChat, gaming and mobile payment solutions. Since 2021, Tencent has expanded the vision, language and autoML capabilities of its CAIDS solutions. Tencent's innovations have mostly been developed by its AI Lab (launched in 2016) and its AI research center in Seattle, Washington.

Tencent is headquartered in Shenzhen, China. It has offices in 14 countries and plans to introduce its CAIDS language services to EMEA and Latin America. Its operations and customers are mostly in China, with about 10% of its customers in other Asia/Pacific countries or the U.S.

Strengths

- **Innovation:** Tencent has greatly increased the range and quality of its prebuilt vertical solutions over the past year. The company has added prebuilt models for several industry verticals, including (but not limited to) education, energy, healthcare, transportation and logistics.

- **Overall viability:** Tencent has grown in three key areas: partnerships, active customers and revenue. Over the past year, Tencent has considerably expanded its number of partnerships, which is driving increased revenue for Tencent's CAIDS offering. During the same period, Tencent's active customer count has grown by about 37% and its CAIDS product revenue has grown by about 26%.
- **Sales execution and pricing:** Tencent offers flexible pricing options, including free trial periods, pay as you go, consumption-based subscriptions and prepaid agreements. Tencent's well-established sales channels and expansive partner ecosystem have boosted its ability to reach and service a growing customer base.

Cautions

- **Geographical strategy:** Tencent offers vision and language services in multiple countries, but its autoML services are almost entirely concentrated in China. Some aspects of its language services, including sentiment analysis and text analytics, are available only in Chinese and English.
- **Product strategy:** Tencent's language services can distinguish speakers but currently lack biometric and speaker verification. However, its product roadmap includes plans to add these capabilities in 2023.
- **Product or service:** Although Tencent has improved its product offerings in areas such as natural language generation (NLG), it is still lagging behind market leaders in other product areas. These include feature store, model explainability, bias detection and remediation, and model portfolio management.

Vendors Added and Dropped

We review and adjust our inclusion criteria for Magic Quadrants as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant may change over time. A vendor's appearance in a Magic Quadrant one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. It may be a reflection of a change in the market and, therefore, changed evaluation criteria, or of a change of focus by that vendor.

Added

- Huawei Cloud

Dropped

- **Aible:** Aible was dropped because its go-to-market strategy does not focus on the persona of a professional software developer.
- **Dataiku:** Dataiku was dropped because its go-to-market strategy does not focus on the persona of a professional software developer.
- **Prevision.io:** Prevision.io has been acquired by Density and is no longer an offering within the CAIDS market.

Inclusion and Exclusion Criteria

To qualify for inclusion in this Magic Quadrant, each vendor must:

- Demonstrate a go-to-market strategy that focuses on the persona of a professional software developer
- Includes all the core capabilities of a CAIDS platform as per the Market Definition (and detailed in the definitions below)
- Have generated at least $15 million in revenue from its CAIDS offerings (excluding professional services revenue) in 2022
- Have at least 75 current paying enterprise customers for its CAIDS offerings

Core Capabilities

autoML Services

Using autoML services, developers can create custom models or supplemental models to use in conjunction with existing general services. The following services allow developers without significant machine learning (ML) or data science skills to customize the vendor-provided ML services or build purpose-specific ML:

- **Automated Data Preparation** — These services can prepare datasets to be used for training the models. These services can cleanse and augment datasets from the raw data that is provided by the organization and can include data visualization.

- **Feature Engineering** — These services automatically evaluate data and add metadata to a dataset that is submitted to the provider. This augmentation can be done via crowdsourcing capabilities or ML models. The feature may also allow for automated detection and classification of features and generation of new features from existing ones.

- **Automated Model Building** — These models require developers to provide datasets that can be used to train the models, as well as metadata tags that have the attributes they want the models to be trained to identify. They must also identify the variable that they want to model to predict. These services analyze the data and then recommend or select the potential best algorithms that can be used to build and optimize the model. The service automatically optimizes the performance and accuracy of the model by tuning the hyperparameters of the model. The service may also blend algorithms to optimize model performance.

- **Model Management/Operationalization** — These services may offer model factory/orchestration functionality to automate the building of ML pipelines, including model training, deployment, monitoring and management of models in production. The service may also provide for packaging and provisioning of infrastructure for the models created, such as Kubernetes containers. The services should also automate creation of APIs needed to access the models. This capability allows developers to monitor models in test and production environments to assess model performance and model drift. This service may provide automated retraining of the model and provision for replacing an outdated model with a better one. Additional features may include business key performance indicators (KPIs) for model value and the ability to assess the quality of data impacting the model performance.

- **Responsible AI** — These services analyze datasets for potential bias, explainability and interpretability:

    - **Automated Bias Detection/Compensation** — These services analyze datasets used to train AI and ML models for potential biases from unbalanced samples (due to oversampling), inclusion of data that is specifically prohibited (due to regulatory constraints) or other sources.

    - **Explainability** — These services explain the workings of the model, such as parameters, weightings of those parameters for a given model output and the algorithm methodology employed in the model.

    - **Interpretability** — These services explain how the model derived its output in a manner that is understandable for developers and other general users.

Optional Capabilities

Language Services

Language services can include:

- **Natural Language Processing/Understanding** — This service includes functions such as tokenization, part-of-speech (POS) tagging, stemming, term frequency-inverse document frequency (TF-IDF) and other text processing functions. Natural language understanding is a subset of natural language processing that deals with machine comprehension. It takes textual input and extracts metadata from the text. Extracting metadata is straightforward, but understanding the intent of the person entering the text is challenging and often requires supplemental models.
- **Speech to Text** — This service is a subset of computational linguistics that converts analog input to text output. This text output can be the final product, or it can be entered into a natural language understanding model so that metadata can be extracted. Many computing devices, such as personal computers and smartphones, have a built-in automated speech recognition (ASR) capability.
- **Natural Language Generation** — This service creates natural language from a machine representation, such as concepts, datasets or minimal descriptions in a knowledge base; or from a logical form, such as a return form that generates a letter to the customer. The service essentially translates data to natural language text.
- **Text to Speech** — This service converts textual input into analog output/speech.
- **Translation** — This service takes text input from the source language and converts it to a target language. This is a challenging task because different languages have distinct structures. It is not as simple as translating a word from one language to the corresponding word in another language.
- **Sentiment Analysis** — This service analyzes language for positive, negative or neutral sentiment based on the words that the developer enters into a conversation or social model. These services may be supplemented by other services that analyze the tone of analog inputs.
- **Text Analytics** — This service analyzes unstructured text to extract elements such as concepts, topics and keyword attributes, and it adds these as metadata.

Vision Services

Vision services can include:

- **Image Recognition/Labeling** — This service normally identifies what objects or people are contained in an image. Some implementations can also identify other attributes in the image, such as colors or patterns. This service enables developers to identify whether people or other items of interest are in an image, to add metadata for classifying or tagging the images, and to submit image datasets for labeling.
- **Video AI** — This service normally combines image recognition and ASR to identify people and other objects in a video and to create a transcript for the audio. Some services also track the movement of people across multiple frames of the video.
- **ML-Enabled Optical Character Recognition (OCR)** — This service converts electronic images of typed, handwritten, printed text, or text in images or video into machine-encoded text and adds metadata to the content. The service also uses ML to classify the information in a given field based on its content.
- **Image Generation** — This service constructs images similar to the given image set or based on a word prompt. Synthetic data is a popular use of image generation.

We excluded any vendor that:

- Did not include autoML services in its CAIDS offering.
- Offered CAIDS only as part of a professional services contract, where the services are used exclusively by the vendor's consultants.
- Offered services that were not native services created and delivered by the vendor. As such, models built by customers using the vendor's platform were not considered.

Honorable Mentions

Live Tech SRL: Live Tech SRL provides the LOKO AI IDE, a low-code and pro-code development environment for data scientists and software engineers to easily drag and drop data sources, algorithms and workflows for model building and operations. The vendor provides integrations to large cloud providers for common storage services and model deployment. Custom extensions can be coded in R and Python and contributed as easy building blocks into the LOKO AI IDE. LiveTech SRL also offers a community edition that can be utilized on-premises. It offers a limited range of prebuilt models for industry-specific use cases, and is still maturing its technology.

Hugging Face: Hugging Face is the extensive open platform for artificial intelligence (AI) and machine learning (ML), called the "Hub." These products, built on top of the Hugging Face Hub platform, aim to make state-of-the-art machine learning more accessible. Using Inference Endpoints, the community quickly deploys custom models or any 200,000-plus pretrained transformers, sentence transformers or diffuser models on dedicated, fully managed infrastructure. With AutoTrain, users create powerful AI models without code. Finally, companies get direct guidance and hands-on help from the Hugging Face experts to accelerate their machine learning roadmaps.

Evaluation Criteria

Ability to Execute

The Ability to Execute criteria used in this Magic Quadrant are as follows (for the sources of information that informed Gartner's evaluations using these criteria, see the Evidence section):

- **Product or Service:** This criterion assesses how competitive and successful a vendor's CAIDS offering is with regard to the critical capability areas, in light of the vendor's RFP response and video submission. Product weight is high due to the critical end-user value generated by the ability to learn, adopt and leverage autoML, language and vision services into innovative and intelligent enterprise applications and systems.
- **Overall Viability:** This criterion concerns the organization's financial status and model as it relates to CAIDS. It also takes account of existing and prospective customers' views about the vendor's likely future relevance.
- **Sales Execution/Pricing:** This criterion covers the vendor's capabilities in sales activities. It includes the overall evaluation and contract negotiation/flexibility with a vendor as well as the value the customer receives.
- **Market Responsiveness/Record:** This criterion addresses the extent to which a vendor has momentum and success in the worldwide market using a balanced set of measures.
- **Customer Experience:** This criterion concerns customers' experience of working with a vendor after a purchase. Factors include the availability of quality third-party resources (such as integrators and service providers), the quality and availability of end-user training and certification, and the quality of the peer-user community.
- **Operations:** This criterion concerns how well a vendor supports its customers, and how trouble-free its software is.

Table 1: Ability to Execute Evaluation Criteria

Evaluation Criteria ↓	*Weighting* ↓
Product or Service	High
Overall Viability	Medium
Sales Execution/Pricing	Medium
Market Responsiveness/Record	Medium
Marketing Execution	Medium
Customer Experience	Medium
Operations	Medium

Source: Gartner (May 2023)

Completeness of Vision

The Completeness of Vision criteria used in this Magic Quadrant are as follows (for the sources of information that informed Gartner's evaluations using these criteria, see the Evidence section):

- **Market Understanding:** This criterion concerns how closely aligned a CAIDS vendor is with the shifting needs of software engineering leaders and how widely its customers use recent and emerging capabilities.
- **Marketing Strategy:** This criterion considers whether a vendor has a clear set of messages that communicate its value and differentiation in the CAIDS market, and whether that vendor is generating awareness of its differentiation.
- **Sales Strategy:** This criterion concerns the extent to which a vendor's sales approach benefits from a range of options and drivers that encourage customers to evaluate its CAIDS offering.

- **Offering (Product) Strategy:** Gartner evaluates a vendor's ability to support key trends that will create business value in the future. Existing and planned products and functions that contribute to these trends are factored into each vendor's score for this criterion, based on its presented roadmap. Vendor roadmaps offered distinction and showed separation, and this criterion is weighted highly due to the fast pace of change and need for prioritized execution in this market.
- **Vertical/Industry Strategy:** This criterion assesses how well a vendor can meet the needs of various industries through templates or packaged data and analytics content. Vendors have been investing in their vertical strategies as organizations are seeking AI built to solve problems within their specific business domains. Thus, this is a highly weighted criterion.
- **Innovation:** This criterion gauges the extent to which a vendor is investing in generative AI capabilities, extending the value of its autoML technology and delivering unique capabilities. It considers whether a vendor is setting standards for innovation that others are emulating. Due to the speed of which innovation is occurring in this market, this is a highly weighted criteria.
- **Geographic Strategy:** This criterion considers how well-represented a vendor is around the world.

Table 2: Completeness of Vision Evaluation Criteria

Evaluation Criteria ↓	*Weighting* ↓
Market Understanding	Medium
Marketing Strategy	Medium
Sales Strategy	Medium
Offering (Product) Strategy	High
Business Model	Medium
Vertical/Industry Strategy	High
Innovation	High
Geographic Strategy	Medium

Source: Gartner (May 2023)

Quadrant Descriptions

Leaders

Leaders have robust offerings in all three key service areas: autoML, language and vision. Their CAIDS offerings are accessible via APIs and do not require developers to have data science expertise. Leaders also provide supporting capabilities to enhance their core services, including automated bias detection and mitigation, feature engineering, NLP, image labeling, MLOps, and AI that is explainable and interpretable. Leaders serve multiple regions and support multiple languages.

Challengers

Challengers are typically large businesses with substantial assets. Challengers have the resources to invest in developing their CAIDS services, but may lack the ability to articulate and map their product vision to market needs. Challengers may operate regionally or globally. They may even dominate in one region.

Visionaries

Visionaries aspire to compete in the CAIDS market and have the resources to succeed, but they have yet to deliver a competitive portfolio of services. Visionaries often offer only a subset of the overall services needed in the market and intend to expand their services to compete with Leaders.

Niche Players

Niche Players typically focus on a narrower range of AI services than Leaders and Challengers. In some cases, they are smaller businesses that have limited resources to invest in their services and in expanding beyond their home region. In other cases, they are larger organizations that struggle to create and execute on a compelling product roadmap.

Context

Software engineering leaders should evaluate the capabilities of CAIDS vendors across numerous dimensions, including:

- **Responsible AI:** In response to increased customer expectations, most CAIDS vendors are investing heavily in improving responsible AI components.
- **Model portfolio management:** Vendors are increasingly productizing and industrializing AI capabilities into platforms that enable governance, reusability, scalability and auditing.
- **Prebuilt models and customizability:** CAIDS vendors are expanding their collection of prebuilt models for specific verticals to democratize AI/ML-augmented software development.
- **Model authoring techniques:** Vendors are consuming and contributing to open-source and open-data libraries and providing software developers with model authoring capabilities across command line interface (CLI), SDK and low-code approaches.
- **Deployment flexibility:** Some vendors offer great flexibility, while others have restrictions on where teams can deploy models.

Key points of differentiation between vendors are their level of maturity in responsible AI, generative AI capabilities, language and geographic support, and flexibility of model deployment.

When selecting autoML services, software engineering leaders should prioritize vendors that excel at providing explainable, transparent models with built-in bias detection. Using CAIDS with those features help teams to build responsible and more ethical AI solutions. The entire life cycle of a model requires development time and continued investment. Software engineering teams will need to increase their skills and fluency with these tools, including in areas such as data acquisition, feature engineering, model authoring and performance improvements.

Beyond acquiring data and authoring new models, software engineering leaders must help their teams learn the skills required to support ModelOps (see A Mandate for MLOps, ModelOps and DevOps Coordination). As developers become more familiar with AI and ML models and the functionality that can be added to applications, they will increasingly take on some or all of the responsibilities of ModelOps. This includes:

- Monitoring and managing ML models in the applications where they are deployed
- Extracting information from (or adding metadata to) unstructured text or data assets
- Using autoML services to build ML models that suggest next best actions, classify and automate document processing, or automate decision making for business workflows
- Evaluating models for ethical concerns and mitigating biases
- Working within a greater community where feature reuse and large model portfolio management become a greater concern

Software engineering leaders must also educate themselves and other stakeholders about the need for responsible AI, as well as the ethical and privacy concerns surrounding AI use. They should drive efforts to create a task force responsible for AI privacy, security and risk. The Gartner 2021 AI in Organizations Study found that organizations that had an AI privacy, security and risk taskforce in place converted a higher proportion of AI proofs of concept into production and received more value from their AI investments.

Market Overview

Recent advancements in generative AI have sparked a massive surge of interest in AI technologies among software engineering leaders and business leaders alike. The number of Gartner inquiries about generative AI has increased by over 1,300% year over year. AWS, Microsoft and Google are the most popular CAIDS vendors discussed within social media. [1] By 2025, the AI software market is expected to reach $134.8 billion in revenue at a compound annual growth rate of 29.2% — growing more than twice as fast as the overall software market. [2] During 2023, there have been many announcements that will continue to shape this market for this year and into the future. [3,4,5,6]

Although software engineering leaders are excited about the potential of AI, this enthusiasm has not yet led to mainstream adoption of emerging AI technologies. In the 2022 Gartner Technology Innovation Bets Survey, AI was the leading technology that participants stated they had not yet deployed but expected to be especially important in the next five years. The survey also found that among many emerging AI technologies, responsible AI was one of the least adopted (only 13% having already deployed).

Software engineering leaders encounter one primary barrier that impedes adoption of AI technologies: a lack of skills within their teams. The 2022 Gartner Technology Innovation Bets Survey also found that, for every emerging AI technology, a lack of skills was always the largest identified limitation to adoption factors — surpassing other factors such as funding, legal, customer or employee resistance and unclear ROI. Software engineering leaders face an urgent need to hire talent and upskill existing staff so that teams can build, maintain and operate ML models.

Cloud AI developer services (CAIDS) are essential tools that can alleviate the amount of effort and upskilling required for software engineering teams. CAIDS vendors are delivering features to help bridge the skills gaps, including:

- Data preparation
- Feature engineering
- Automated ML building
- Deployment in production environments, where further monitoring of drift and tuning can take place
- Monitoring for accuracy, performance and ethical concerns

CAIDS Enable Software Engineering Teams to Build Next-Generation Applications

CAIDS will not replace software engineers. Rather, these services augment the capabilities of your teams so that they can wield their application, data and technical skills in new ways.

CAIDS empower software engineers to build more predictive and intelligent features that better meet the needs of their users. CAIDS provide the autoML capabilities that software engineering teams need to create and customize ML models. Software engineering teams are using ML models to enhance the functionality of existing applications and to create new types of applications. ML models can classify information, predict trends, assess risks and automate processes across all functional areas and workflows.

CAIDS are also essential for building an integrated MLOps pipeline, where software engineering teams do not have to assemble individual tools and figure out how to make them work together. This automated pipeline can enable developers to deliver new and enhanced application functionality more quickly and efficiently.

Software engineering leaders can benefit from the simplicity of using a single CAIDS vendor that provides autoML, language and vision services. This approach can improve developer experience and streamline your teams' workflows by enabling them to move fluidly between services. Using multiple vendors is not out of the question, however. Smaller vendors that specialize in autoML could provide services and capabilities that align closely with your use cases, and they could offer the greatest value.

CAIDS Vendors Are Expanding and Improving Their Services

In the past year, CAIDS vendors have greatly expanded their libraries of prebuilt ML models for vertical solutions and have vastly improved their support for these solutions. Vendors have further democratized AI by offering far more prebuilt models in sectors such as education, life sciences, professional services, transportation, and banking and finance. Gartner inquiry regarding generative AI has increased over 1,300% YoY, and CAIDS vendors have been announcing new generative capabilities and partnerships across both vision and language use cases.

CAIDS vendors are also improving their capabilities across three key use cases:

- **AutoML:** Smaller vendors continue to lead the innovation of autoML capabilities, but large vendors are catching up. Vendors are expanding beyond ML model performance and accuracy to focus on delivering explainability, transparency and bias mitigation features. Vendors are also fine-tuning the core autoML features that software engineering teams need in order to rapidly develop, deploy and maintain models in production environments.
- **Language:** Vendors are developing massive language models that can deliver an expanded range of high-quality language services. Major cloud vendors are using their immense computing infrastructure to develop proprietary language models. Smaller vendors are using open-source software, data and ML models to try to compete.
- **Vision:** Nearly every CAIDS vendor has improved its vision capabilities. The prolific use of computer vision in China has driven immense improvements among China-based vendors in the past year. OpenAI's release of DALL-E 2 in 2022 has added investment, focus and innovation to CAIDS vendors' current execution plans, partnerships and roadmap direction.

We expect CAIDS vendors to grow and evolve by increasing the flexibility of model deployments, by improving model portfolio management and responsible AI, and by offering more capabilities and services that use generative AI.

Evidence

[1] Approved Methodology: Gartner conducts social listening analysis leveraging third-party data tools to complement or supplement the other fact bases presented in this document. Due to its qualitative and organic nature, the results should not be used separately from the rest of this research. No conclusions should be drawn from this data alone. Social media data in reference is from 1 January 2021 through 20 February 2023 in all geographies (except China) and recognized languages. *Fahim Talmeez from the social media analytics team contributed to this research.*

[2] Forecast Analysis: Artificial Intelligence Software, Worldwide

[3] General Availability of Azure OpenAI Service Expands Access to Large, Advanced AI Models With Added Enterprise Benefits, Microsoft.

[4] AWS and Hugging Face Collaborate to Make Generative AI More Accessible and Cost Efficient, AWS.

[5] An Important Next Step on Our AI Journey, Google.

[6] Baidu ERNIE Bot Press Conference, YouTube.

2021 Gartner AI in Organizations Survey. This survey was conducted to understand the keys to successful AI implementations and the barriers to the operationalization of AI. The research was conducted online from October through December 2021 among 699 respondents from organizations in the U.S., Germany and the U.K. Quotas were established for company size and for industries to ensure a good representation across the sample. Organizations were required to have developed AI or intended to deploy AI within the next three years. Respondents were required to be part of the organization's corporate leadership or report into corporate leadership roles, and have a high level of involvement with at least one AI initiative. Respondents were also required to have one of the following roles when related to AI in their organizations. determine AI business objectives, measure the value derived from AI initiatives or manage AI initiatives development and implementation. Disclaimer: Results of this survey do not represent global findings or the market as a whole, but reflect the sentiments of the respondents and companies surveyed.

2022 Gartner Technology Innovation Bets Survey. This study was conducted to determine the attitudes and processes surrounding the adoption of key technologies, as well as the roles responsible for technology adoption. The types of challenges and impact associated with these technologies were also addressed. The research was conducted online from May through June 2022 among 164 respondents from North America (n = 92; the U.S. and Canada), Europe (n = 40; the U.K.) and Asia/Pacific (n = 32; Australia and Singapore). Results were from respondents with $50 million or more in 2021 enterprisewide annual revenue. Industries surveyed included banking/investment services, education providers, energy, government, healthcare, IT, insurance, manufacturing, natural resources, retail, services, communications service providers, transportation, utilities and wholesale. Respondents were screened for job title, company size, job responsibilities (which had to focus on either IT- or business-related tasks), awareness of specific innovation technology decisions within the company, accuracy of knowledge related to specific technologies, and deployment time frame of technology. Disclaimer: Results of this survey do not represent global findings or the market as a whole, but reflect the sentiments of the respondents and companies surveyed.

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor for the defined market. This includes current product/service capabilities, quality, feature sets, skills and so on, whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability: Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood that the individual business unit will continue investing in the product, will continue offering the product and will advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor's capabilities in all presales activities and the structure that supports them. This includes deal management, pricing and negotiation, presales support, and the overall effectiveness of the sales channel.

Market Responsiveness/Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional initiatives, thought leadership, word of mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements and so on.

Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure, including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen to and understand buyers' wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the website, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling products that uses the appropriate network of direct and indirect sales, marketing, service, and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets as they map to current and future requirements.

Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical markets.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.

Document Revision History

Magic Quadrant for Cloud AI Developer Services - 23 May 2022

Magic Quadrant for Cloud AI Developer Services - 24 February 2021

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Recommended by the Authors

Some documents may not be available as part of your current Gartner subscription.

How Markets and Vendors Are Evaluated in Gartner Magic Quadrants

Critical Capabilities for Cloud AI Developer Services

Predicts 2023: How Innovation Will Transform the Software Engineering Life Cycle

Market Guide for AI-Augmented Software-Testing Tools

The Impact of AI and ML on Software Engineering

Innovation Insight for ML-Powered Coding Assistants

Quick Answer: How Will AI and ML Expand Software Engineering Leaders' Responsibilities?

3 Urgent Conversations AI and Software Engineering Teams Need to Have With One Another

Innovation Insight for Generative AI

Case Study: Driving Speed to Value With AI/ML (Kaiser Permanente)

Table 1: Ability to Execute Evaluation Criteria

Evaluation Criteria ↓	*Weighting* ↓
Product or Service	High
Overall Viability	Medium
Sales Execution/Pricing	Medium
Market Responsiveness/Record	Medium
Marketing Execution	Medium
Customer Experience	Medium
Operations	Medium

Source: Gartner (May 2023)

Table 2: Completeness of Vision Evaluation Criteria

Evaluation Criteria	*Weighting*
Market Understanding	Medium
Marketing Strategy	Medium
Sales Strategy	Medium
Offering (Product) Strategy	High
Business Model	Medium
Vertical/Industry Strategy	High
Innovation	High
Geographic Strategy	Medium

Source: Gartner (May 2023)