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| Photo displaying partial image of two pie charts on a canvas-textured page |
| Mistral.ai Company Profile |
| |  |  |  | | --- | --- | --- | | Sandeep Vijayasarathy |  |  | |

Contents

[Introduction 2](#_Toc190276239)

[Company Overview 2](#_Toc190276240)

[Funding 2](#_Toc190276241)

[Founders 2](#_Toc190276242)

[Models Overview 2](#_Toc190276243)

[General-Purpose Models 2](#_Toc190276244)

[Mistral Large 2 2](#_Toc190276245)

[Mistral Small 2](#_Toc190276246)

[Mistral NeMo 3](#_Toc190276247)

[Specialist Models 3](#_Toc190276248)

[Codestral 3](#_Toc190276249)

[Mistral Embed 3](#_Toc190276250)

[Pixtral 12B 3](#_Toc190276251)

[Research Models 3](#_Toc190276252)

[Mixtral 3](#_Toc190276253)

[Mathstral 3](#_Toc190276254)

[Codestral Mamba 3](#_Toc190276255)

[Other Offerings 4](#_Toc190276256)

[Le Chat 4](#_Toc190276257)

[La Plateforme 4](#_Toc190276258)

[Applications and Use Cases 4](#_Toc190276259)

[Chatbots 4](#_Toc190276260)

[Text Summarization 4](#_Toc190276261)

[Content Creation 4](#_Toc190276262)

[Text Classification 5](#_Toc190276263)

[Code Completion 5](#_Toc190276264)

[Sentiment Analysis 5](#_Toc190276265)

[Multilingual Support 5](#_Toc190276266)

[References 5](#_Toc190276267)

# Introduction

Mistral AI is a French artificial intelligence startup specializing in open-weight large language models (LLMs). The company was founded in April 2023 by former engineers from Google DeepMind and Meta Platforms. Mistral AI aims to "democratize" AI, emphasizing open-source innovation as an alternative to proprietary AI systems.

# Company Overview

**Headquarters**: Paris, France

**Founded**: April 2023

**Valuation**: Reached over $2 billion by December 2023, and further elevated to €5.8 billion ($6.2 billion) by June 2024.

**Employees**: 51-200

# Funding

* €105 million raised in June 2023
* €385 million raised in October 2023
* €600 million raised in June 2024

# Founders

* Arthur Mensch: Former researcher at Google DeepMind and CEO of Mistral AI.
* Guillaume Lample: From Meta Platforms.
* Timothée Lacroix: From Meta Platforms

# Models Overview

Mistral AI’s [large language models (LLMs)](https://ai-pro.org/learn-ai/articles/your-comprehensive-guide-to-llms/) are grouped into three main categories - general-purpose models, specialist models, and research models.

## General-Purpose Models

Mistral AI’s general-purpose models are versatile tools capable of handling a broad array of natural language processing (NLP) tasks. These models excel in text generation, language translation, and more, offering cutting-edge performance relative to their size and computational demands.

### Mistral Large 2

As Mistral AI’s flagship model, Mistral Large 2 boasts an astonishing 123 billion parameters. Launched in September 2024, it has consistently outperformed most open models in benchmark tests, even rivalling advanced closed-source models.

### Mistral Small

Featuring 22 billion parameters, it serves as a cost-effective middle ground between Mistral Large 2 and smaller models like Mistral NeMo.

### Mistral NeMo

Developed in collaboration with NVIDIA, Mistral NeMo features 12 billion parameters and is specifically designed for multilingual applications. It is the only fully open-source model within Mistral’s general-purpose offerings. Licensed under Apache 2.0, users have unrestricted access to modify and deploy it for both commercial and non-commercial purposes.

## Specialist Models

Specialist models from Mistral AI are purpose-built for specific applications rather than general text processing, making them ideal for tasks that require domain-specific expertise.

### Codestral

Focused on code generation, Codestral supports over 80 programming languages, including Python, Java, and C++. It’s governed by the Mistral AI Non-Production License, intended for research and testing, though commercial licenses can be obtained upon request.

### Mistral Embed

Specializing in word embeddings, this model generates vector representations of words to capture semantic relationships. It’s especially useful for applications requiring deeper semantic understanding of text, though it currently supports only the English language.

### Pixtral 12B

A multimodal model with 12 billion parameters, Pixtral processes both text and images, thanks to a combination of a text decoder and an image vision encoder. This unique architecture enables tasks like image-based question answering and has demonstrated competitive performance on multimodal AI benchmarks.

## Research Models

Mistral’s research models are fully open source, with no restrictions on commercial use or deployment environments. They provide a foundation for experimentation, development, and real-world application.

### Mixtral

The Mixtral family employs a sparse mixture of experts (MoE) architecture, enabling only a subset of model parameters to be activated during inference. This design improves efficiency while maintaining high performance. Variants like Mixtral 8x7B and Mixtral 8x22B deliver powerful NLP capabilities with lower computational demands.

### Mathstral

An optimized offshoot of the original Mistral 7B, Mathstral is built to solve mathematical problems more efficiently. Available under the Apache 2.0 license, it’s widely used in math-focused NLP applications.

### Codestral Mamba

Unlike traditional transformer models, Codestral Mamba leverages a new mamba architecture aimed at boosting speed and extending context length. This novel design allows for enhanced responsiveness and performance in extended context scenarios.

# Other Offerings

## Le Chat

Le Chat is Mistral AI’s interactive chatbot service, designed to facilitate dynamic conversations and generate content akin to established platforms like ChatGPT and Claude. Le Chat enables users to engage with various Mistral models, each offering distinct strengths. Users can choose from Mistral Large for enhanced reasoning, Mistral Small for cost-effective, fast responses, and Mistral Large 2 for experimental interactions

## La Plateforme

La Plateforme serves as Mistral AI’s development and deployment API platform, providing users with an intuitive ecosystem for experimenting with and fine-tuning Mistral’s models on custom datasets. This platform supports both technical and non-technical users, streamlining the process of creating and deploying AI-driven applications.

Key Features of La Plateforme -

* **Agent Builder** - A user-friendly interface that enables users to create, customize, and configure AI agents with ease. Users can select models, set temperature parameters, and provide specific instructions or examples to fine-tune performance.
* **Model Selection** - Users can select from Mistral’s diverse range of models, ensuring optimal performance for their unique applications and use cases.
* **Agent API** - For developers seeking integration capabilities, the Agent API provides programmatic access, enabling seamless incorporation of AI agents into existing workflows and automation processes.

# Applications and Use Cases

## Chatbots

Mistral AI’s models are essential for powering [intelligent chatbots](https://ai-pro.org/learn-ai/articles/the-top-8-ai-chatbots-in-2024/) capable of understanding and responding to natural language queries with precision and a human-like touch. They are widely used in customer service, technical support, and sales assistance, offering real-time support with minimal human intervention.

## Text Summarization

Mistral AI’s models excel at summarizing lengthy documents, reports, and articles. This functionality is invaluable for professionals dealing with information-dense materials, such as researchers, journalists, and legal analysts, saving them significant time and effort.

## Content Creation

The content generation capabilities of Mistral AI are a game-changer for marketers, writers, and businesses. The models can produce high-quality, contextually relevant text for a wide range of formats, including blog posts, emails, social media content, short stories, and more.

## Text Classification

Mistral AI’s models are adept at classifying text into specific categories, enabling businesses to automate processes like email filtering, customer inquiry categorization, and content moderation. This capability improves operational efficiency, reduces manual workload, and enhances customer experience.

## Code Completion

Developers can leverage Mistral AI’s models to accelerate software development through code generation and completion. These models suggest code snippets, optimize existing code, and even identify and fix bugs.

## Sentiment Analysis

Sentiment Analysis can detect and interpret the emotional tone behind text inputs, identifying whether the sentiment is positive, negative, or neutral. This application is particularly useful for businesses tracking customer feedback, analysing social media mentions, and evaluating public sentiment about products, services, or brand reputation.

## Multilingual Support

Mistral AI’s models offer multilingual capabilities, supporting languages such as English, French, Spanish, German, Italian, Portuguese, Arabic, Hindi, Russian, Chinese, Japanese, and Korean. This multilingual support allows organizations to deploy AI-driven solutions in diverse linguistic environments, making them ideal for global businesses and international customer support.

# References

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