

Google AI Studio

Streamline your GenAI app development

Thang Nguyen - miai.vn



Proprietary



About me

Thang Nguyen

**Head of Development, Sai Gon - Ha Noi Bank
Founder of Mì AI (miae.vn)**

Technology Specialist in the financial and banking sector with about 20 years of experience in building, developing and administering software systems for many banks and fintech companies in Vietnam.



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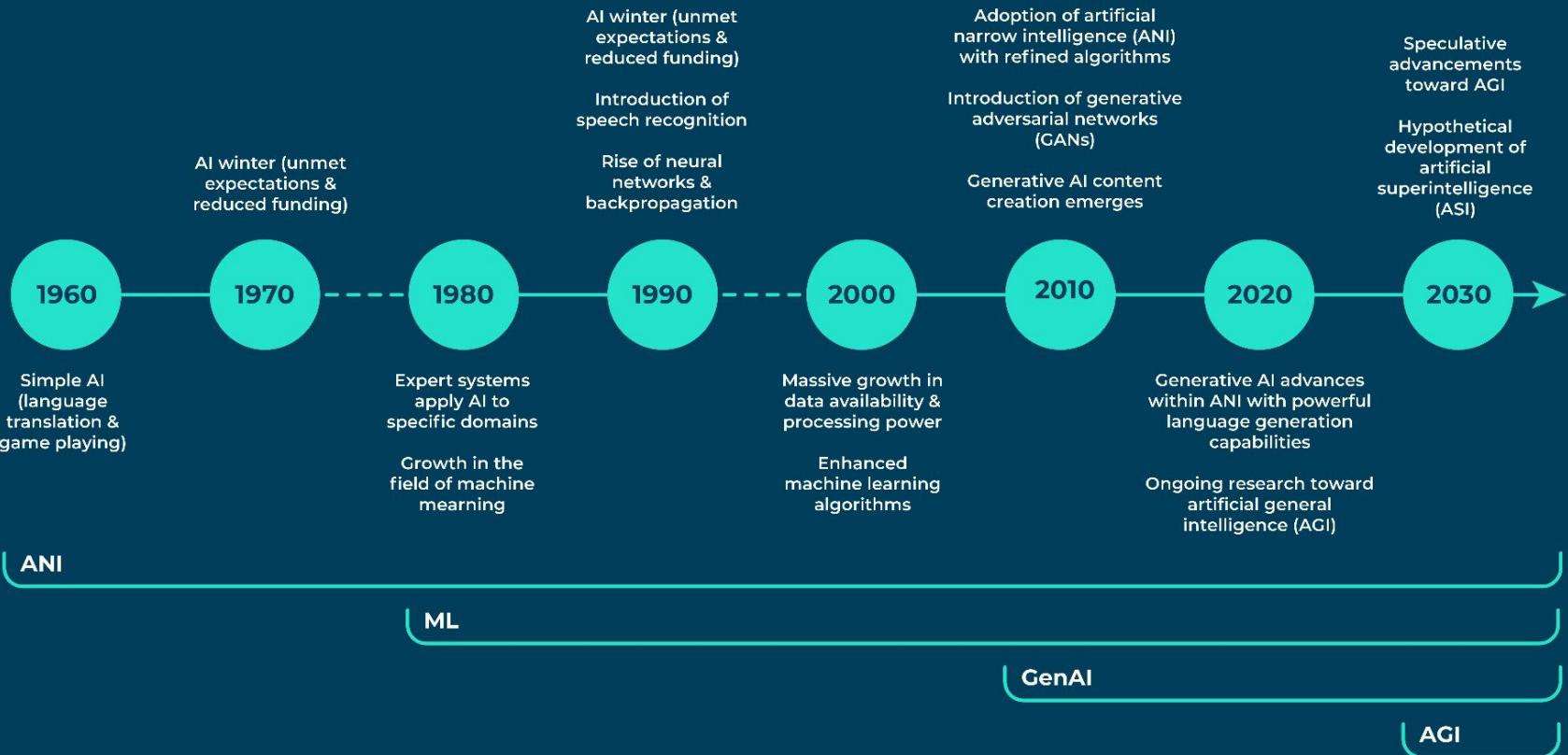


What we have today?

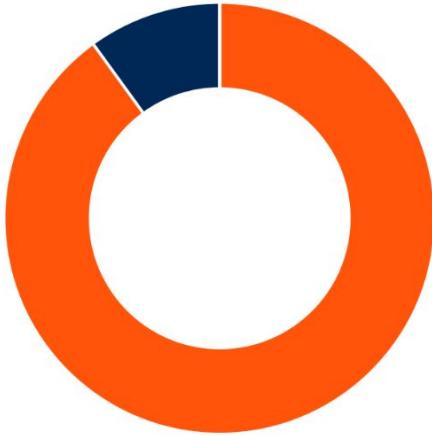
- #1 Trends about GenAI application
- #2 How Google AI Studio can help?
- #3 Deep dive in Google AI Studio
- #4 Summary and Q&A



Trends about GenAI Application



Impact on Deals of GenAI Presence in Products and Services



90% of respondents indicated that their software purchases included GenAI capabilities

n = 3,068 respondents

Source: 2025 Gartner Business Buyer Survey

12 RESTRICTED

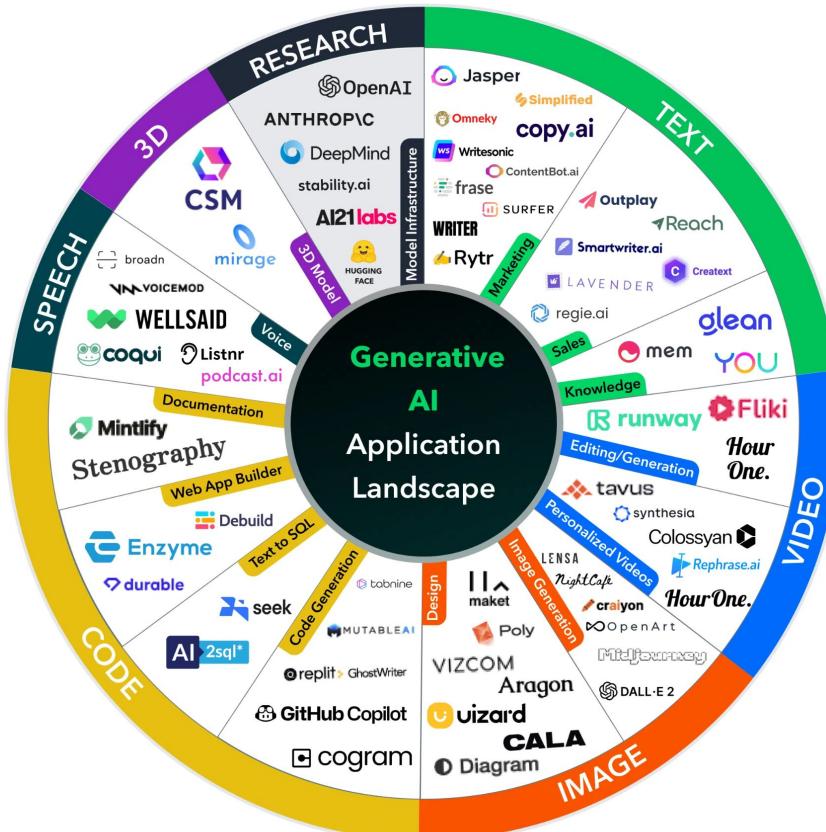
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25% of respondents reported achieving **high-quality deals** with purchases that included GenAI

Gartner®

AI & GenAI have turned from a need
into a must!



LẠC VIỆT

PHẦN MỀM NHÂN SỰ TÍCH HỢP CHATBOT AI

TĂNG HIỆU SUẤT QUẢN TRỊ NGUỒN LỰC TỐI ƯU

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MISA AMIS
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Trải nghiệm ngay

AVA

[TRANG CHỦ](#) › [ĐỒ CHƠI SỐ](#)

Đôi dép quai hậu nặng 1,9kg, dùng AI để giúp bạn đi bộ nhanh hơn 2,5 lần

PH - WEBUY, ⌚ 5 THÁNG TRƯỚC

 [Thích 0](#)[Chia sẻ](#)

▶ Nghe đọc bài 2:27

1x ⌂



Đeo lên chân là "lướt" như gió, đôi giày Moonwalker trông
trượt patin giá nghìn đô này giúp bạn đi bộ nhanh hơn, hiệ



Trường đại học có cả trại thực hành, vườn thí

Học viện Nông nghiệp Việt Nam Tài trợ

- Ai thích gọn gàng nhất định mua cáp sạc kiểu này ⌚ 5
- Pin dự phòng tích hợp cáp là xưa rồi, bạn đã thấy củ sạc nào tích hợp cáp
- Tủ chống ẩm Fujihome chính thức "lên kệ": Giải pháp lưu trữ cho thiết bị kỹ thuật số ⌚ 5



Generative AI in a Nutshell

Prompt Engineering/Design

Bad prompt

You give me an agenda for a workshop

Good prompt

You give me an agenda for a workshop

Iterate!

prompt → response → updated prompt

Autonomous Agents with tools

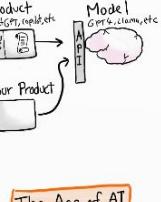


Here Be Dragons

Side effect
Better communication skills overall

Better prompt engineering skills = Better results
Study, Practice, Learn

Using vs Building AI-powered products



The role of Humans

Is human role X still needed?
doctor, doctors, lawyer, teacher, etc...

Decide what to ask.
Evaluate results and how

Compensate for AI weaknesses
hour of brainstorms!

Provide context
legal compliance
data security
etc, etc...



Mindset

Positive

I will be insanely productive!

We will be insanely productive!

AI might not take your job, but people/companies using AI will

Panic

AI is going to steal my job!

Capacity

But where did that come from?

Our own issue!

Artificial intelligence

Human intelligence

Time

Fast Revolution

Slow Revolutions



Computers have gotten smarter

Execute Instructions

Learn + Think

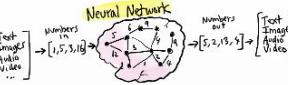
Henrik Kniberg
Jan 2024

How to survive
and thrive in
the age of AI

Einstein in your basement

Biggest limitation is You

How it works

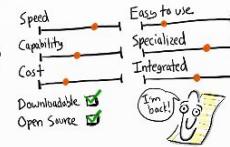


Dogs are → animals

Dogs are animals → that

Dogs are animals that are known for... (like barks)

Models, models everywhere



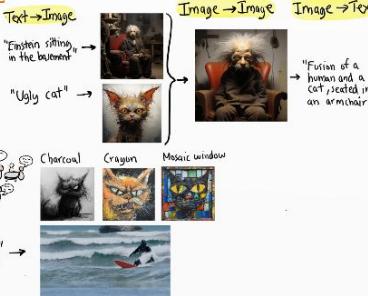
Training

- ① Unsupervised Generative Pretraining (lots + lots of text...) → Back-propagation
- ② Reinforcement Learning with Human Feedback (RLHF)



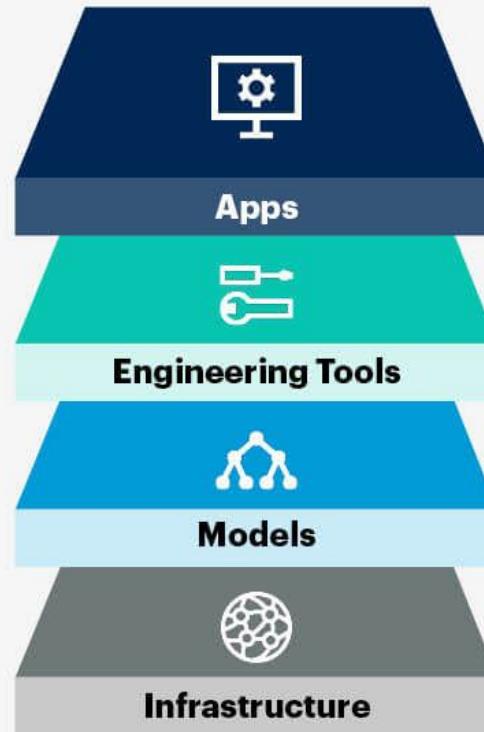
whatever whatever

Model Types



How Google AI Studio can help?

Generative AI Technology Stack Layers



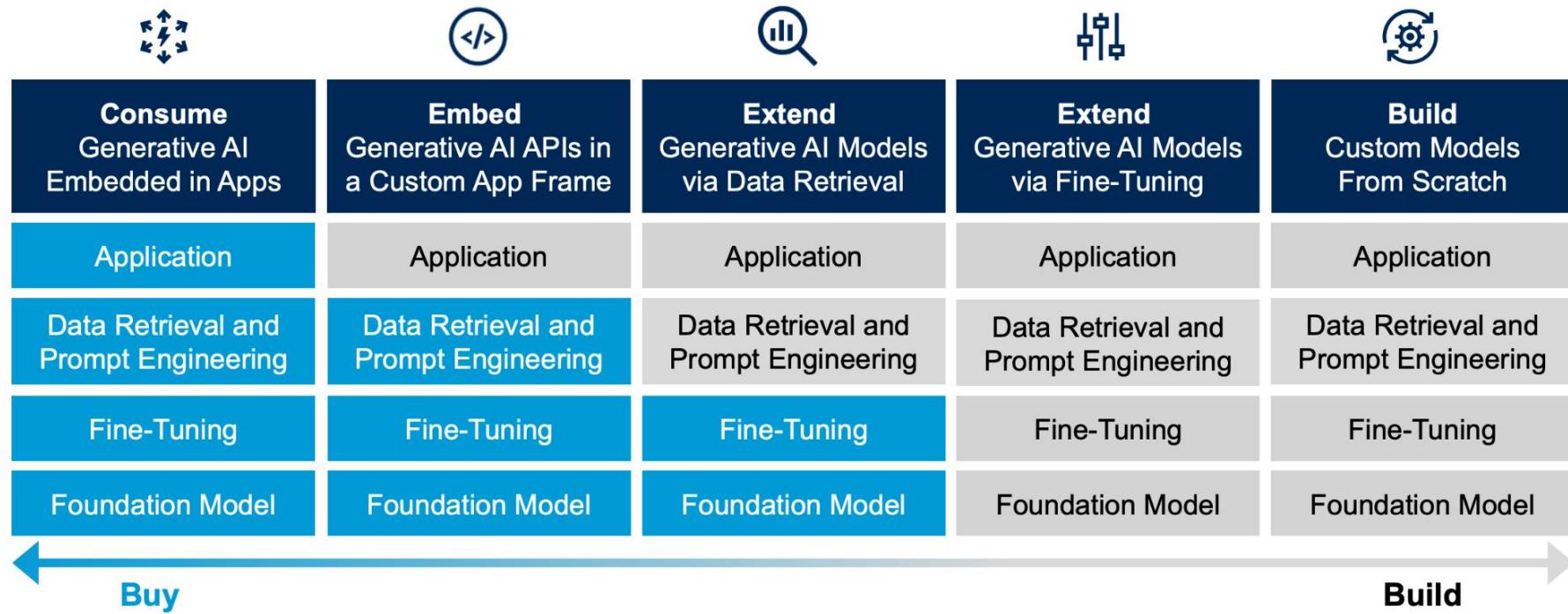
Source: Gartner

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Gartner

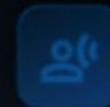
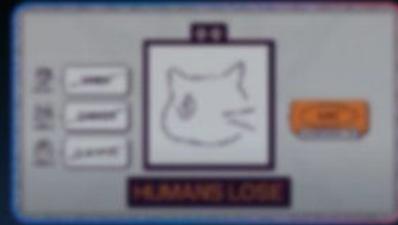
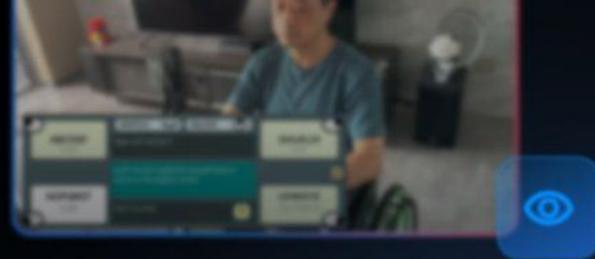
Generative AI Development Approaches

■ Provider Managed ■ Self-Managed



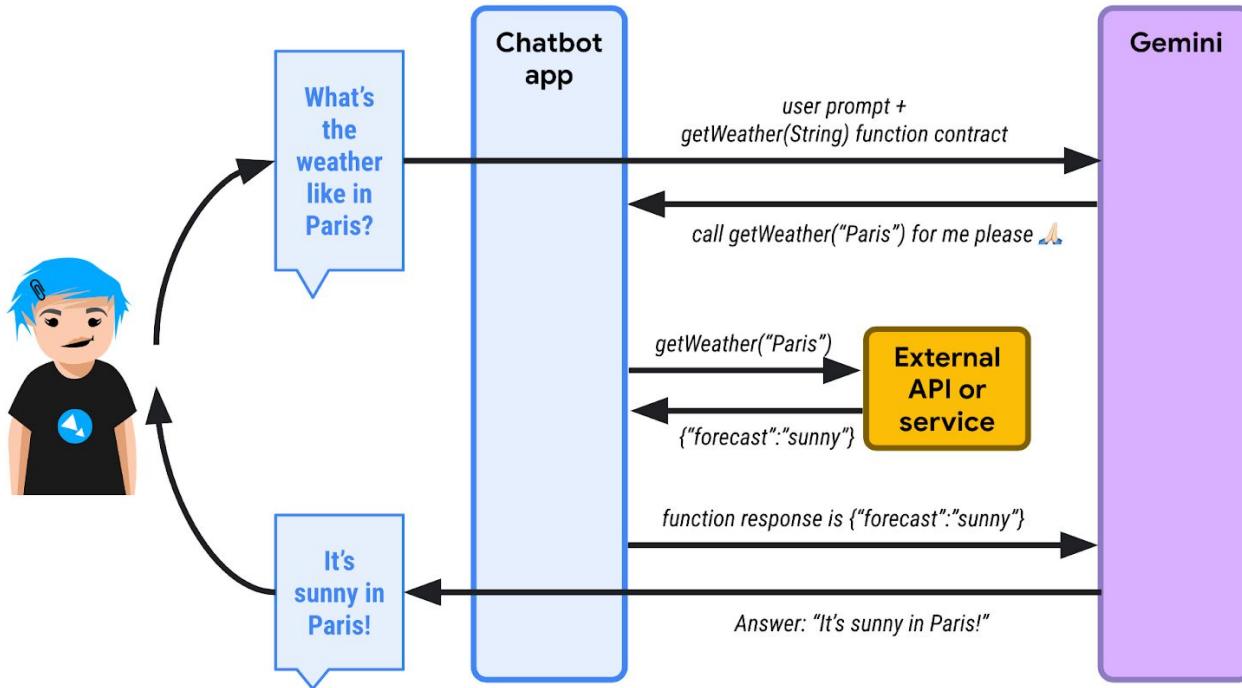


Gemini API

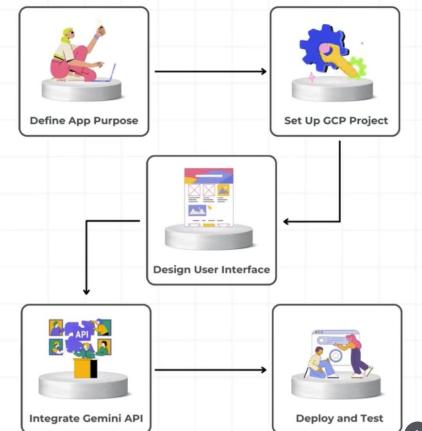


...and about 3 new projects, such as AI or reverse-engineering existing systems.
The project includes 3 project documents with descriptions of how things work.
It is currently still in development and may never work well and may continuously change public. For others, contributing welcome. Many more new exciting ideas.





Building an AI App with Gemini API



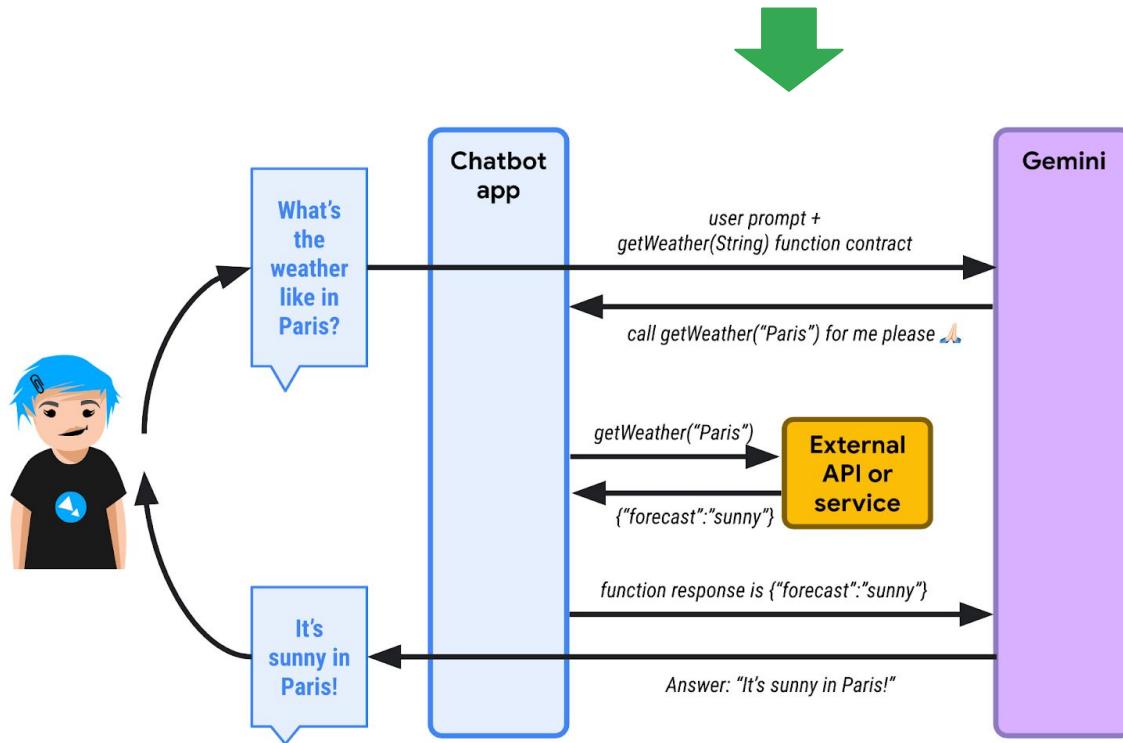
Google AI Studio

Google AI Studio is a **cloud-based integrated development environment (IDE)** provided by Google. It is designed to **help developers, students, and researchers easily create, experiment with, and deploy AI models**, especially generative AI models such as Gemini.

Google AI Studio

- **Simplifying AI Development:** Provides an intuitive interface that allows users—even non-technical ones—to easily interact with Google's advanced AI models without the need for complex installations.
- **Enabling Rapid Prototyping and Experimentation:** Quickly try out AI models, fine-tune prompts, and preview output results in real time.
- **Providing Access to Advanced AI Models:** Grants preview access to Google's AI models, enabling users to leverage multimodal capabilities (processing text, images, code, audio, and video).
- **Supporting Real-World AI Application Development:** After prototyping and testing, users can easily convert their work into source code for integration into their own applications via the Gemini API.

Google AI Studio



Google AI Studio Untitled prompt Compare C

Get API key

Create Prompt

Stream Realtime

Starter Apps

Tune a Model

Library

- Creating a White Airpl...
- Car Placement Grid
- Barnaby's Farm Adve...

Prompt Gallery

API documentation

Developer forum

Changelog NEW

This experimental model is for feedback and testing only. No production use.

Settings

Type something

Run Run Run Run

Run settings

Get code

Model

Gemini 2.0 Flash Experimental

Output format NEW

Images and text

Token count 0 / 32,768

Temperature 1

Advanced settings

What will you build?

Push Gemini to the limits of what AI can do using the Gemini API

Image Editing
Edit an image of croissants.

Visual Story
Generate a story with images.

Birthday Card
Design a custom birthday card.

Sử dụng tài khoản Google (Gmail) để truy cập

Deep dive into Google AI Studio

GUI Hands-on

- **Text Generation Model - Gemini 2.0 Flash**
 - Temperature
 - Structured Output
 - Code Execution
 - Function Calling
 - Grounding with Google Search
 - URL Context
- **Image Generation Model - Gemini 2.0 Flash Review - Image Gen**
- **Stream**
- **Media**
 - Image: Image Gen 4, Image Gen 4 Ultra
 - Video: Veo 2 (Veo 3 unavailable now)
 - Text to Speech

API Hands-on

- Python call Text and Image Generation
- N8N call Image Generation



Build apps

Image Generation app using Gemini API

The screenshot shows a dark-themed web application titled "Build apps with Gemini" (EXPERIMENTAL). At the top, there's a search bar with the placeholder text "an image generator app use Gemini". To the right of the search bar are two buttons: a blue plus sign button and a blue upward arrow button. Below the search bar is a horizontal navigation bar with four items: "+ Start from a template", "Dynamic text game using Gemini", "Gemini powered code review", and "Imagen pixel art maker". The main content area features a "Showcase" tab selected, followed by "Your apps", "Recent apps", and "FAQ". Below this, there are four cards representing different AI-generated applications:

- Gemini OS**: Simulate a computer with a UI that is generated dynamically from user interactions. Tags: Gemini 2.5 Flash-Lite, Generative UI.
- Mumble Jumble**: A playground to discover the range of creative voices that the Gemini native audio out has to offer. Tags: Gemini 2.5 Flash Audio, Imagen, Live API.
- Live Audio**: Experience real-time voice chat with 3D visuals react to your conversation, bringing AI interaction to life. Tags: Gemini 2.5 Flash Audio, Live API.
- PromptDJ**: Steer a continuous stream of music with text prompts. Tags: Lyria, Music generation.

Summary

GAS in nutshell

Fast development with an intuitive interface:

Enables developers to build, test, and refine large language model (LLM) applications easily without complex infrastructure.

Integration with the Google Cloud ecosystem:

Seamlessly connects with services like Vertex AI, BigQuery, and Firebase, allowing real-world AI applications at scale.

Optimized for cost and performance:

Offers a range of Gemini models to choose from—balancing quality and cost based on use case needs.

Powerful prompt engineering support:

Provides tools to manage and test prompts, ensuring better control and reusability of AI-generated content.

Developer-friendly:

Supports code export in multiple languages (Python, Node.js, etc.), making it easy to integrate into apps and systems.

Pricing

◆ Gemini 2.0 Flash		
gemini-2.0-flash, alias that points to gemini-2.0-flash-001		
\$ Input/Output API Pricing	Input	Output
• All context lengths	\$0.10	\$0.40
(API pricing per 1M tokens, UI remains free of charge)		
★ Best for	✉️ Use case	
<ul style="list-style-type: none"> Multimodal understanding Realtime streaming Native tool use 	<ul style="list-style-type: none"> Process 10,000 lines of code Call tools natively, like Search Stream images and video in realtime 	
⌚ Knowledge cutoff	⌚ Rate limits	⚡ Latency
Aug 2024	2000 RPM	— +
<div style="border: 1px solid #ccc; padding: 5px; display: inline-block;"> Free 15 RPM 1500 req/day </div>		

◆ Gemini 2.0 Flash Preview Image Generation		
gemini-2.0-flash-preview-image-generation		
\$ Input/Output API Pricing	Input	Output
• Text	\$0.10	\$0.40
• Image (*Output per image)	\$0.10	\$0.039
(API pricing per 1M tokens, UI remains free of charge)		
★ Best for	✉️ Use case	
<ul style="list-style-type: none"> Multimodal understanding Multimodal generation Native tool use 	<ul style="list-style-type: none"> Process 10,000 lines of code Call tools natively, like Search Generate interleaved text and images 	
⌚ Knowledge cutoff	⌚ Rate limits	⚡ Latency
Aug 2024	10 RPM	— +
<div style="border: 1px solid #ccc; padding: 5px; display: inline-block;"> Free 10 RPM 1500 req/day </div>		

◆ Gemini 2.5 Pro		
gemini-2.5-pro		
\$ Input/Output API Pricing	Input	Output
• <=200K tokens	\$1.25	\$10.00
• > 200K tokens	\$2.50	\$15.00
(API pricing per 1M tokens, UI remains free of charge)		
★ Best for	✉️ Use case	
<ul style="list-style-type: none"> Coding Reasoning Multimodal understanding 	<ul style="list-style-type: none"> Reason over complex problems Tackle difficult code, math and STEM problems Use the long context for analyzing large datasets, codebases or documents 	
⌚ Knowledge cutoff	⌚ Rate limits	⚡ Latency
Jan 2025	150 RPM	— +

Project number	Project name	API key	Created	Plan
...9136	Gemini API	...5A18	Jul 16, 2025	<div style="border: 1px solid #ccc; border-radius: 10px; padding: 5px; display: inline-block;"> Free Set up billing View usage data </div>

Testing in studio is...always free!

Thank you!

