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◆ Gemini

Vibe Coding 101

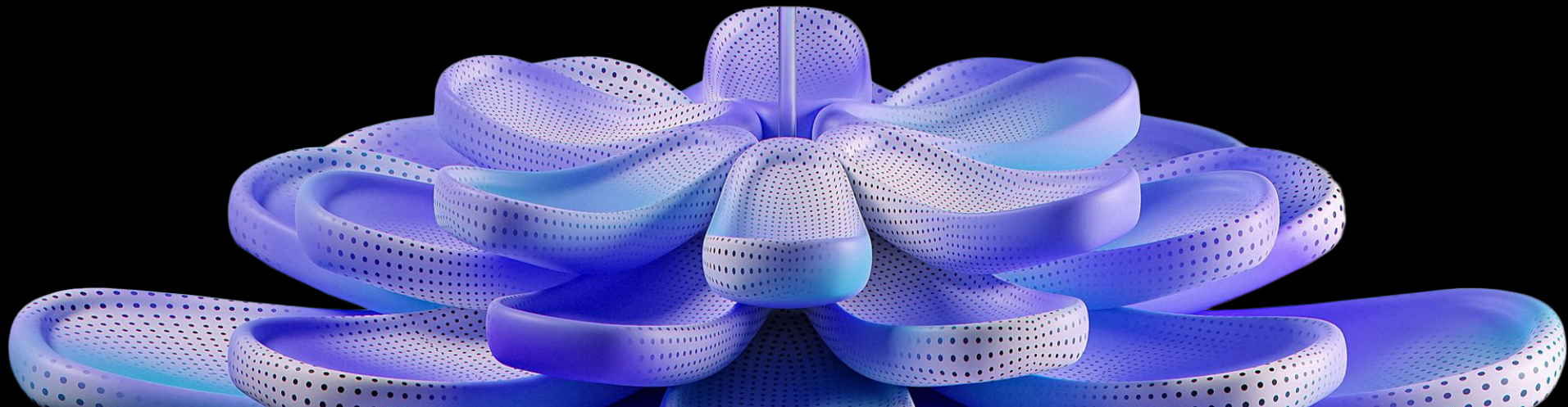


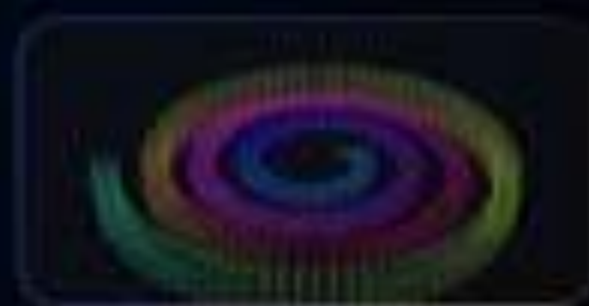
Mahin Sheth

Data and AI Engineer
Google



**The opportunity with
AI is as big as it gets.**





◆ Gemini 3

Bring any idea to life



In Today's Session

1. What is Vibe Coding?
2. Popular Google Tools
3. Demo Time
4. From Idea to a Prototype



What is Vibe coding?

The Evolution of AI Development

Code Generation

The "Assistant" model. Tools like Copilot that autocomplete syntax and write small functions.

- ▶ Goal: Speed up typing.
- ▶ Scope: Single lines or blocks.
- ▶ Vibe: "I'm driving, AI is the GPS."

Vibe Coding

The "Creator" model. Creating entire apps via natural language prompts and iteration.

- ▶ Goal: Immediate results.
- ▶ Scope: Full files or prototypes.
- ▶ Vibe: "Just make it work, I don't care how."

Have you ever had a great idea for an app but didn't know how to code?

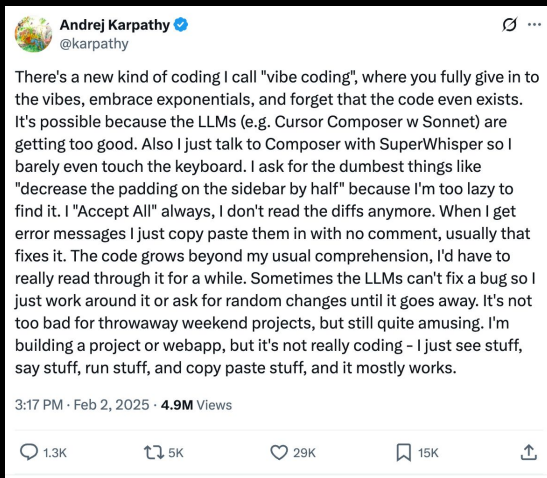


What is Vibe Coding?

- AI-assisted development process.
- It's about describing your idea in plain English and letting AI be your coding partner.

Who coined this term?

Vibe coding is an artificial intelligence-assisted software development style popularized by Andrej Karpathy in early 2025



Myth Busting

Myth: You need to be a programmer to build an app.

Reality: With tools like Gemini and AI Studio, you can create a functional prototype without writing a single line of code.

Myth: AI does everything, and you just watch.

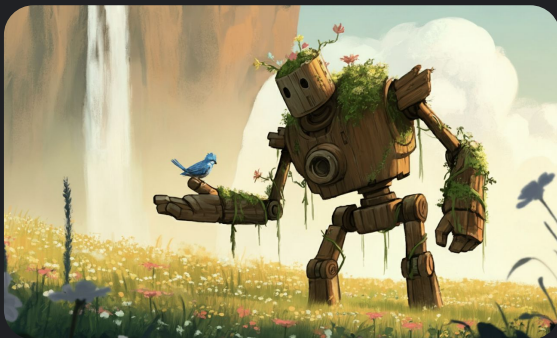
Reality: Vibe coding is a partnership. Your role is to guide the AI, test the results, and provide feedback.

The case for Vibe Coding



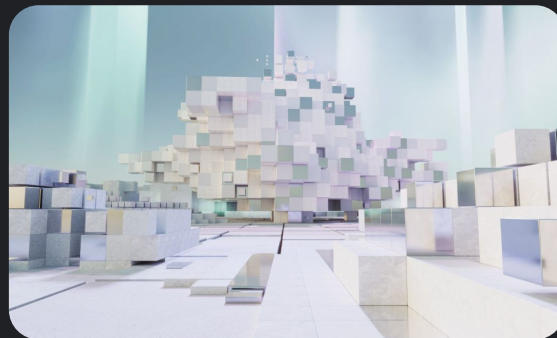
Amazing way to get in tune with the pace of progress in AI

Every time I start a new project, I'm staggered by how good AI has become.



Fun, useful and addictive - the only limit is your patience

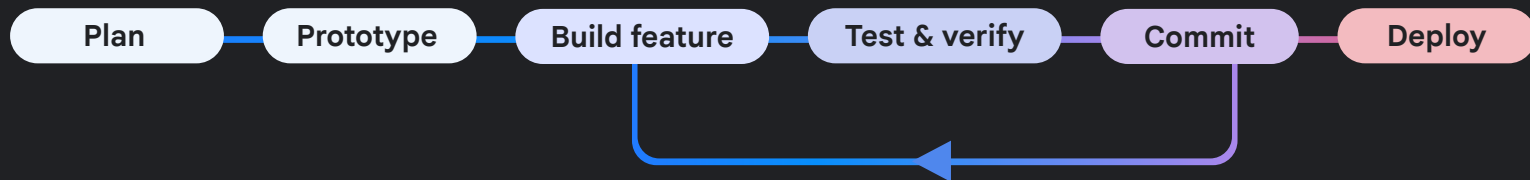
...and being able to finish one project before moving on to another.



Teaches you a new way to use your brain and see the world

This is also very useful in a work context.

How Vibe Coding Works



Plan out your idea

Check viability, plan features, understand end-to-end process

Choose your AI tool

Depends on required technical complexity and freedom, and on your skills and preferences

Build your features

By using natural language, testing features after each addition, and having lots of patience






Share your work

Options to export, share or deploy your work will vary by tool, as will the amount of work required

Some Popular Google Tools

Google's suite of vibecoding tools

Shortlist, ranked from simple to more complex and powerful

Tool	First helps you develop a plan & list of features?	Run code from within the environment?	Supports more complicated code (eg multiple files)?	Integrates with 3P (data storage etc) services?	Share without deploying somewhere else?	Choose your own language?	Main reason to use this tool
 <u>Gemini Web App (with Canvas)</u>	If you ask	Yes ✓	No ✗	No ✗	Yes ✓	No ✗	Lives within familiar UI, fast
 <u>"Build With Gemini" in AI Studio</u>	No ✗	Yes ✓	Yes ✓	No ✗	Yes ✓	Yes (within a set list)	Best combination between easy and powerful
 <u>Firebase Studio</u>	Yes ✓	Yes ✓	Yes ✓	Yes ✓	Yes ✓	Yes (within a set list)	Planning: deploy to users without Google accounts; more advanced options
 <u>Antigravity</u>	Yes ✓	Runs code on your device	Yes ✓	Yes ✓	No ✗	Yes ✓	More independent than Gemini CLI, better planning, can test your code on its own with agentic browsing
 <u>Gemini CLI</u>	If you ask	Runs code on your device	Yes ✓	Yes ✓	No ✗	Yes ✓	SUPER powerful and flexible; execute all actions from one tool

Gemini Canvas

gemini.google.com

Gemini

2.5 Pro

Create a gym member attendance app that also tracks how they felt after each workout

Show thinking

I've created a modern and responsive Gym Attendance Tracker for you. This application allows you to log your daily workouts and track how you felt afterward using emojis and personal notes.

Here is the React application file.

Gym Attendance Tracker

Aug 15, 4:28 PM

Try again without Canvas

What do you want to build?

+ 🗨 Canvas

Your Google chats aren't used to improve our models. Gemini can make mistakes, so double-check it. [Your privacy & Gemini](#)

Enterprise Mode

PRO

Gym Attendance Tracker

Code Preview Share

Gym Attendance Tracker

Log Today's Workout

Workout History

August 15, 2025

How did you feel?

🏋️

😄

😐

😐

😐

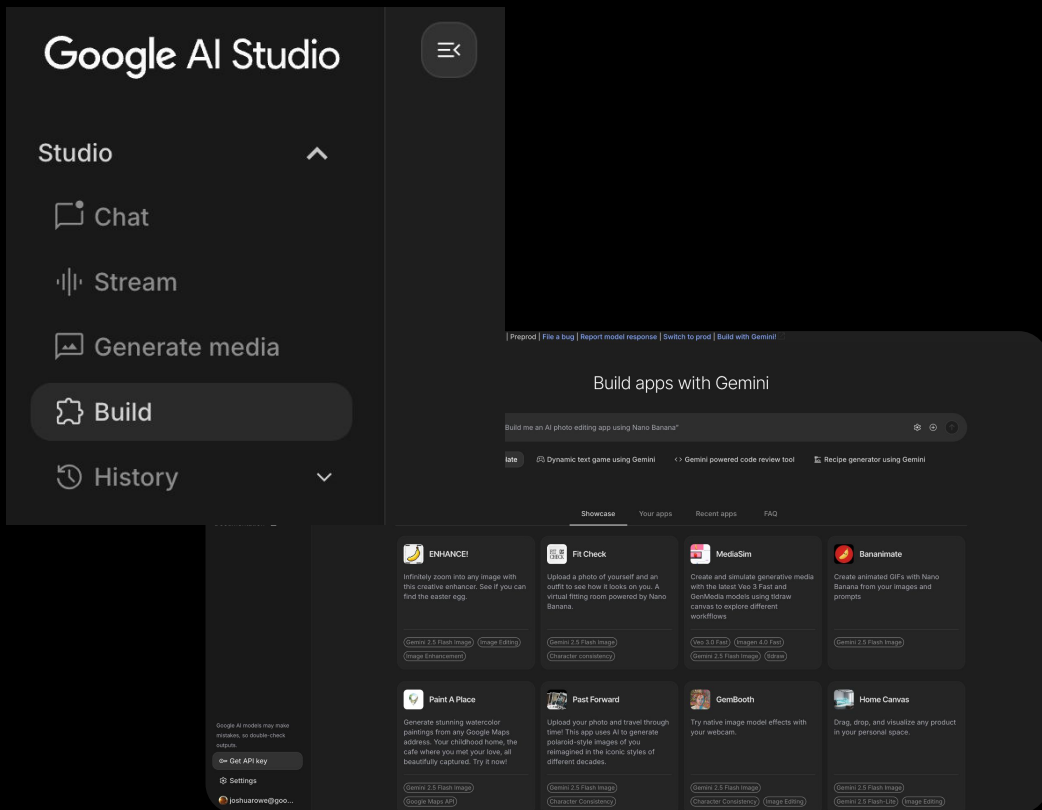
Notes:

I enjoyed pull-ups

AI Studio - Build

Hosted development environment with fully managed development environment and deployment

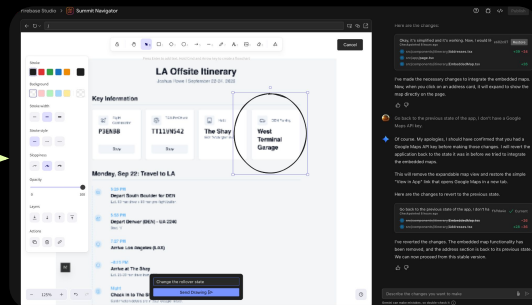
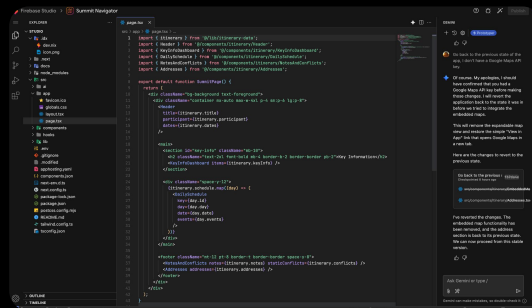
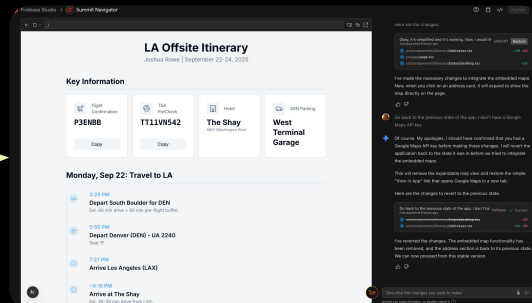
- Tight integration with Gemini API
- Full IDE
- Set your own system prompt
- Optimized for Angular or React



Firebase Studio

Hosted IDE with fully managed development environment and deployment

- Prototyper mode - agent + live preview
- Code mode - full IDE (VS Code)
- Visual annotation and editing tools



Gemini CLI

Gemini in your Terminal

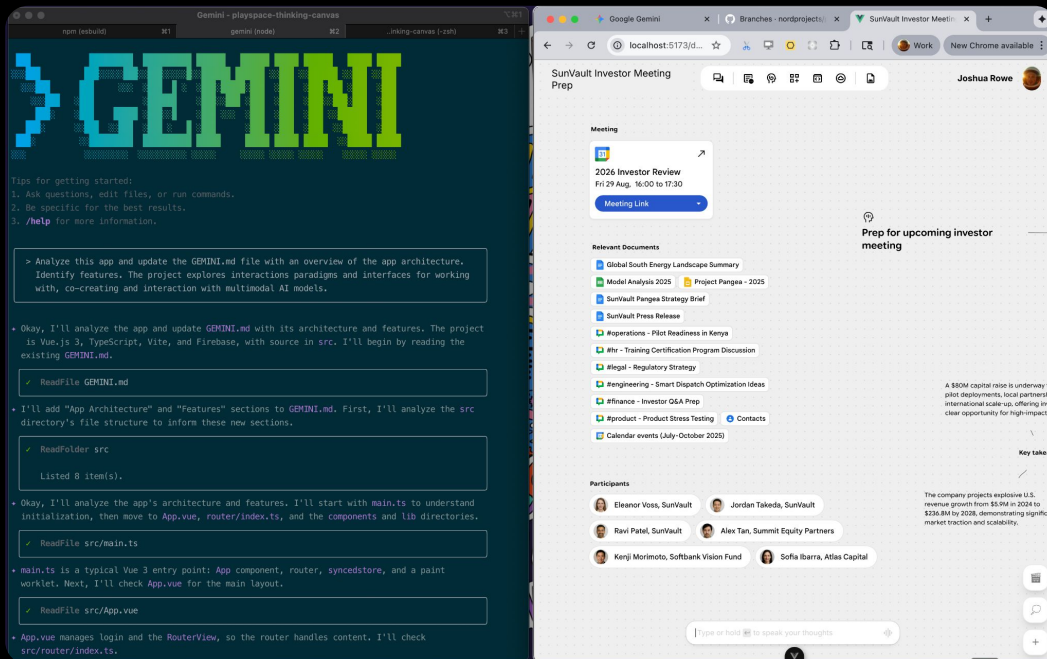
- Local file system access
- Execute all terminal commands
- Manage local development environment
- Natural language git* commands
- * the golden rule “commit early and often” learn git!
- MCP servers

Install

`npm install -g @google/gemini-cli`

or, if you use brew:

`brew install gemini-cli`



The logo features a stylized 'A' icon composed of three curved segments in blue, green, and orange, followed by the text 'Google Antigravity' in a white sans-serif font.

Google Antigravity

Google Antigravity is an **agentic development platform** that empowers developers to act as architects, orchestrating autonomous agents that plan and execute complex tasks across the editor, terminal, and browser.

IDE & Code

High-level orchestration
in familiar interface

Terminal & Operations

Autonomous building,
testing, fixing

Browser & Preview

End-to-end execution &
verification

Gemini Native Foundation

Gemini 3 Pro Reasoning

Gemini 2.5 Computer Use

Demo Time

Register for the Geotab Hackathon



From Idea to Prototyping

Vibe Coding Context Collapse

Relying solely on AI's "feel" for complex projects creates fragile systems. As the "big-picture" context fades, projects suffer from architectural decay and mounting technical debt.

Why the Collapse Happens

- **Loss of System Context:** AI excels in isolation but fails to maintain system-wide coherence, leading to broken dependencies.
- **The "Slop" Feedback Loop:** Low-quality AI output pollutes future training data, causing model degradation.
- **Developer Skill Gap:** Over-reliance creates a generation unable to debug deeply or understand underlying logic.

The Evolution: Prompt Engineering → Context Engineering

Context Engineering

- System prompt, user prompt, attachments, tools, etc.

The art of providing the necessary context
for an **agent** to accomplish a **specific task**

- A system capable of autonomously performing a task.

From Visual Idea to a Working App

This phase is all about action. We'll take the concepts we brainstormed and turn them into a tangible, interactive prototype without writing complex code.

Start with your blueprint

Create Simple Mockups:

Use prompts like, "Create a simple UI layout for the app's home screen. It needs a logo at the top, a list of three items, and a navigation bar at the bottom." Gemini Canvas will generate a visual wireframe.

Define the User Journey:

Ideate with Gemini and and creates a clear flow for you to follow.

The Output:

A clear, visual plan

Build using AI Studio

Craft the Core Logic:

For example, if you're building a "Guide to AI," you'd use AI Studio to create and test the prompt that powers your jargon buster.

Get Your API Key:

This key is like a password that lets your final app use Gemini API.

Deploy using Firebase Studio or Vertex AI

Deploy and Share:

With a single click, Firebase Studio builds the app and hosts it on a shareable URL. (You can use this link to submit for the hackathon)

For Prod grade deployments, you can use use Vertex AI too.



**"Don't be a code monkey. Be the Architect.
Let Antigravity be the contractor."**

— The Future of Software

Thank you

