

# AI Coding Agents and How to Code Them

Alex Shershebnv

Head of [ML|Dev]Ops  
DevRel  
DevAskMeAnything  
Zencoder AI



Subscribe To Newsletters 

Forbes

SMALL BUSINESS > SMALL BUSINESS STRATEGY

# Business Tech News: Zuckerberg Says AI Will Replace Mid-Level Engineers Soon

By Gene Marks, Contributor. I write about tech that impacts my small business - ... 

Follow Author

Jan 26, 2025, 07:00am EST



Save Article

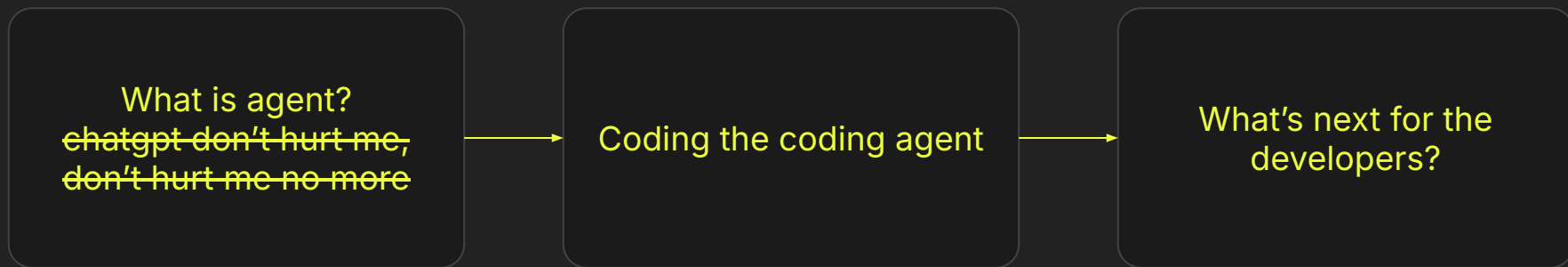


Comment 0



Benchmark			Gemini 2.5 Pro Experimental (03-25)	OpenAI o3-mini High	OpenAI GPT-4.5	Claude 3.7 Sonnet 64k Extended Thinking	Grok 3 Beta Extended Thinking	DeepSeek R1
Reasoning & knowledge Humanity's Last Exam (no tools)			18.8%	14.0%*	6.4%	8.9%	—	8.6%*
Science GPQA diamond	single attempt (pass@1)		84.0%	79.7%	71.4%	78.2%	80.2%	71.5%
	multiple attempts		—	—	—	84.8%	84.6%	—
Mathematics AIME 2025	single attempt (pass@1)		86.7%	86.5%	—	49.5%	77.3%	70.0%
	multiple attempts		—	—	—	—	93.3%	—
Mathematics AIME 2024	single attempt (pass@1)		92.0%	87.3%	36.7%	61.3%	83.9%	79.8%
	multiple attempts		—	—	—	80.0%	93.3%	—
Code generation LiveCodeBench v5	single attempt (pass@1)		70.4%	74.1%	—	—	70.6%	64.3%
	multiple attempts		—	—	—	—	79.4%	—
Code editing Aider Polyglot			74.0% / 68.6% whole / diff	60.4% diff	44.9% diff	64.9% diff	—	56.9% diff
Agentic coding SWE-bench verified			63.8%	49.3%	38.0%	70.3%	—	49.2%
Factuality SimpleQA			52.9%	13.8%	62.5%	—	43.6%	30.1%
Visual reasoning MMMU	single attempt (pass@1)		81.7%	no MM support	74.4%	75.0%	76.0%	no MM support

# Agenda





An AI agent is a software that  
performs tasks on behalf of a  
user



# Current AI Coding Assistants

## Code generation

Generate code suggestions based on your prompt or as you type (code completion)

## Code refactoring

Optimize and simplify your code

## Docs generation

Documentation generation

## Error detection

Identification of possible bugs and errors in the code, usually in real time as you type







# Agentic design patterns

## Tool Use

The LLM is given tools such as web search, code execution, or any other function to help it gather information, take action, or process data.

## Reflection

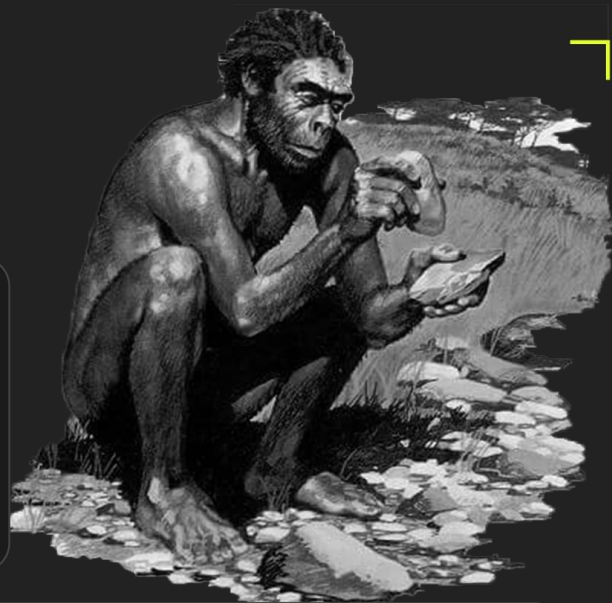
The LLM examines its own work to come up with ways to improve it.

## Planning

The LLM comes up with, and executes, a multistep plan to achieve a goal (for example, writing an outline for an essay, then doing online research, then writing a draft, and so on).

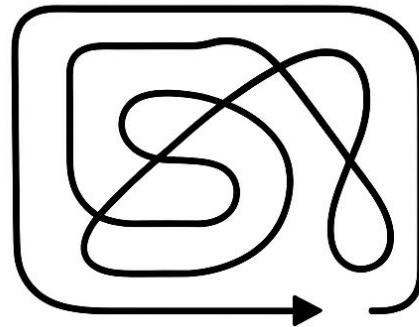
## Multi-agent collaboration

More than one AI agent work together, splitting up tasks and discussing and debating ideas, to come up with better solutions than a single agent would.





**Planning**



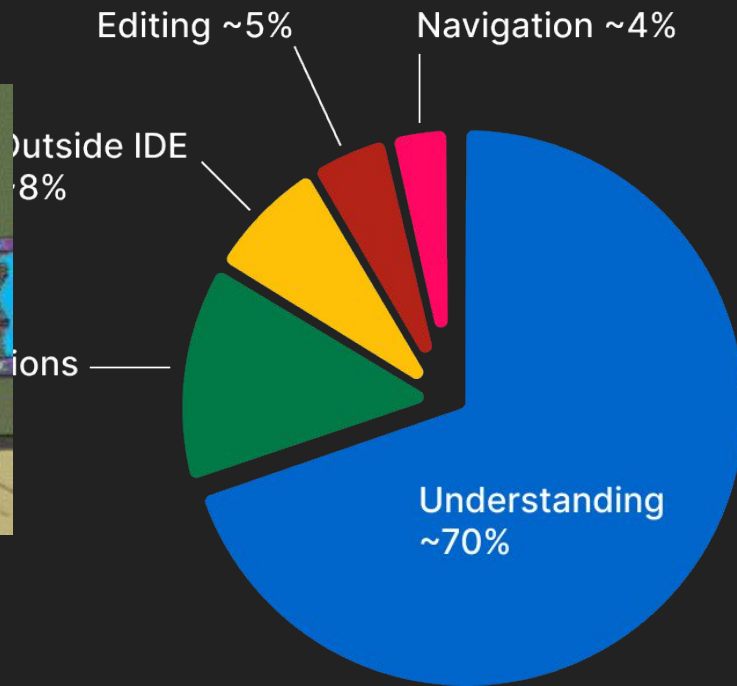
**Tool  
use**



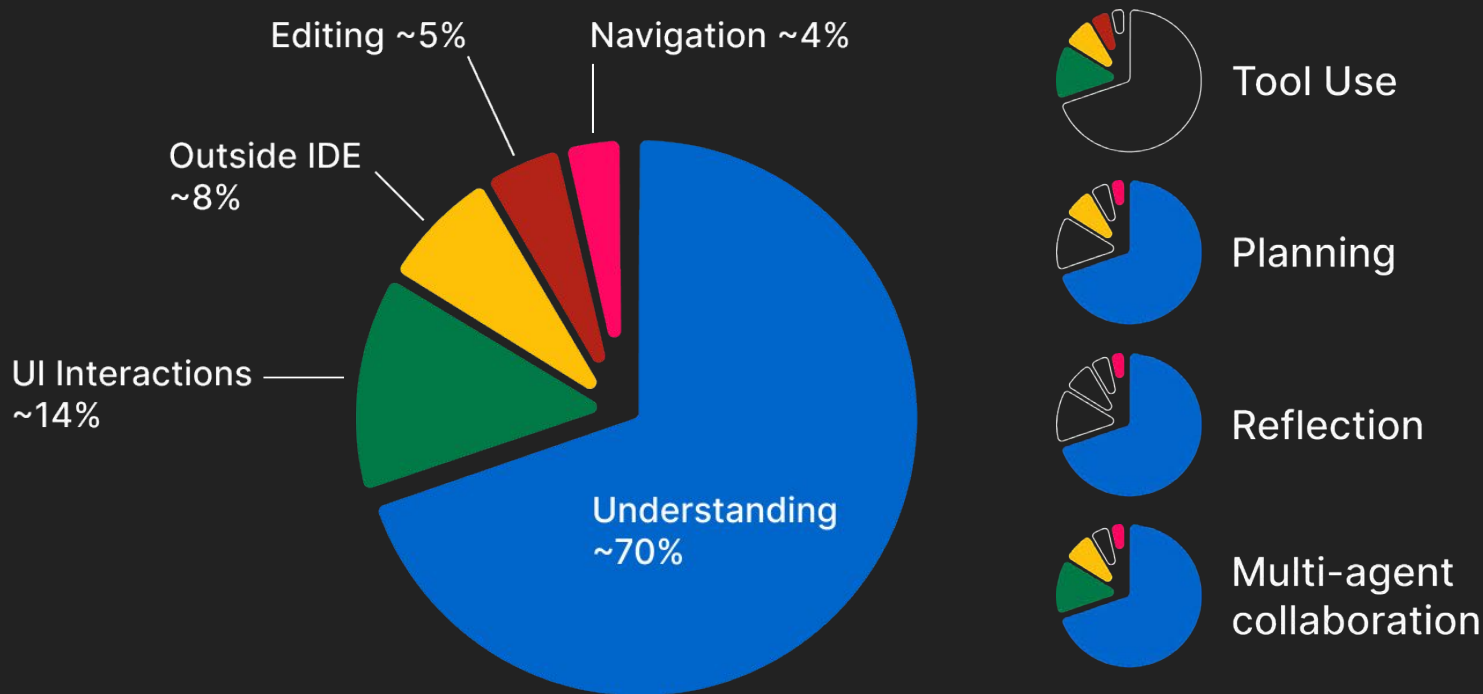
# Multi-agent collaboration (?)



# How do developers spend their time



# How do developers spend their time



Let's (finally) do some coding





<https://github.com/zencoderai/coding-the-coding-agents>





# The 5 stages of grief



Denial



Acceptance



Anger



Bargaining



Depression





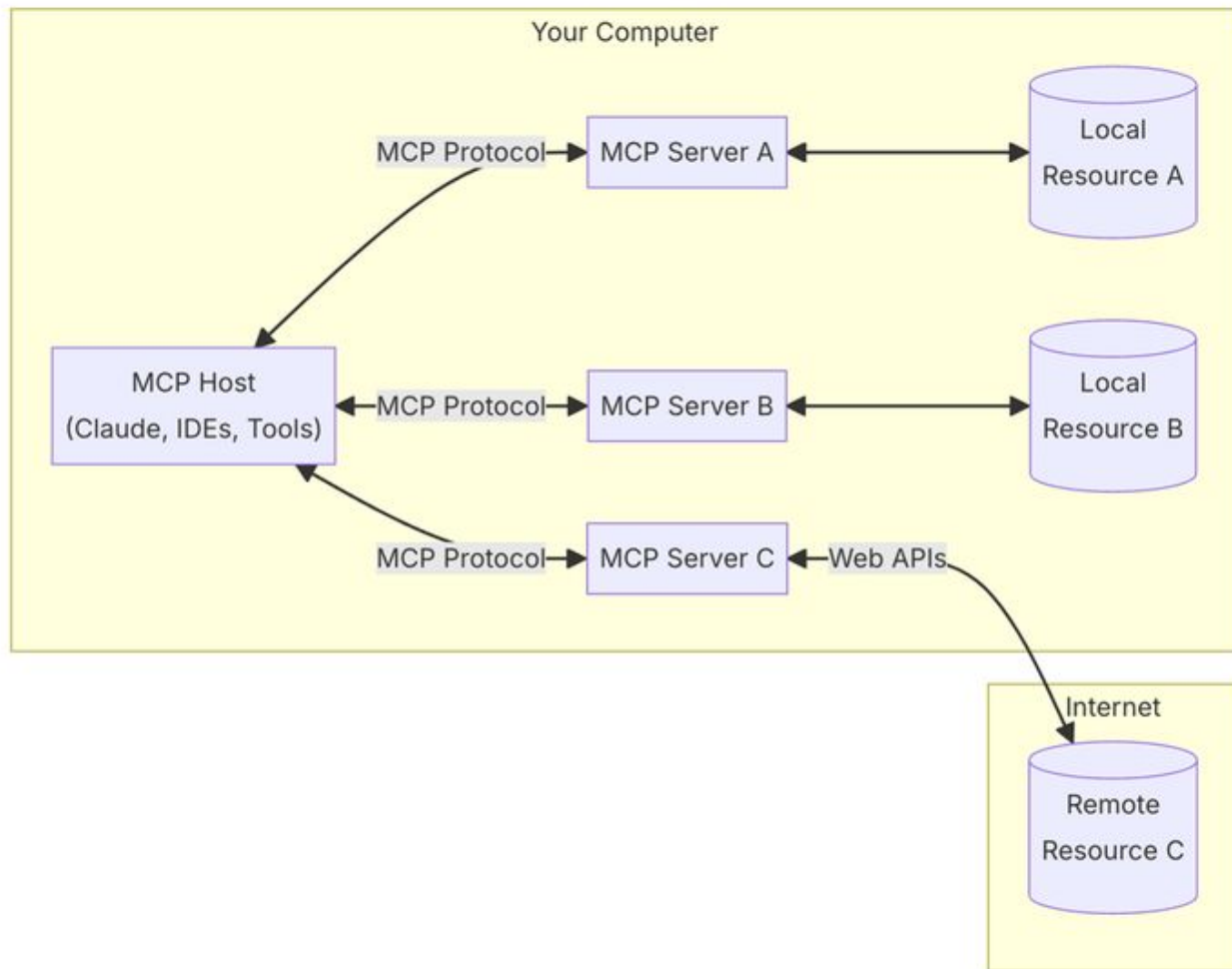


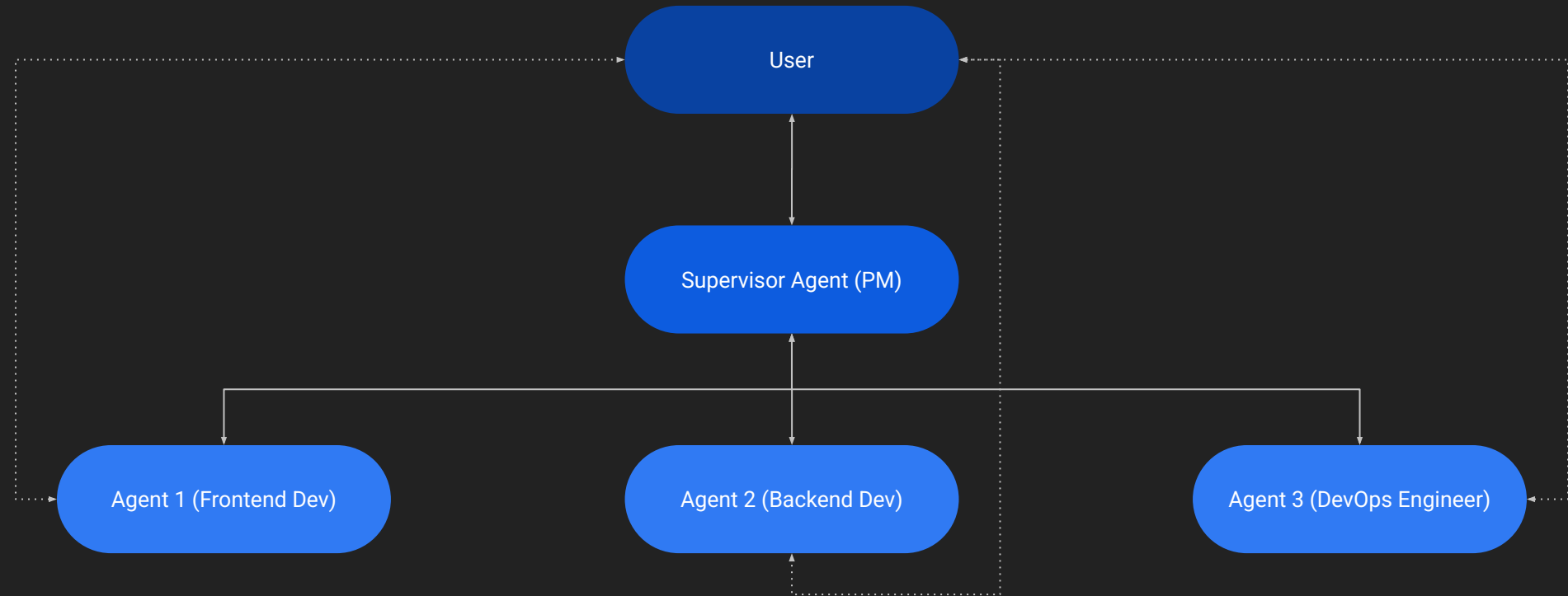
<https://github.com/zencoderai/coding-the-coding-agents>

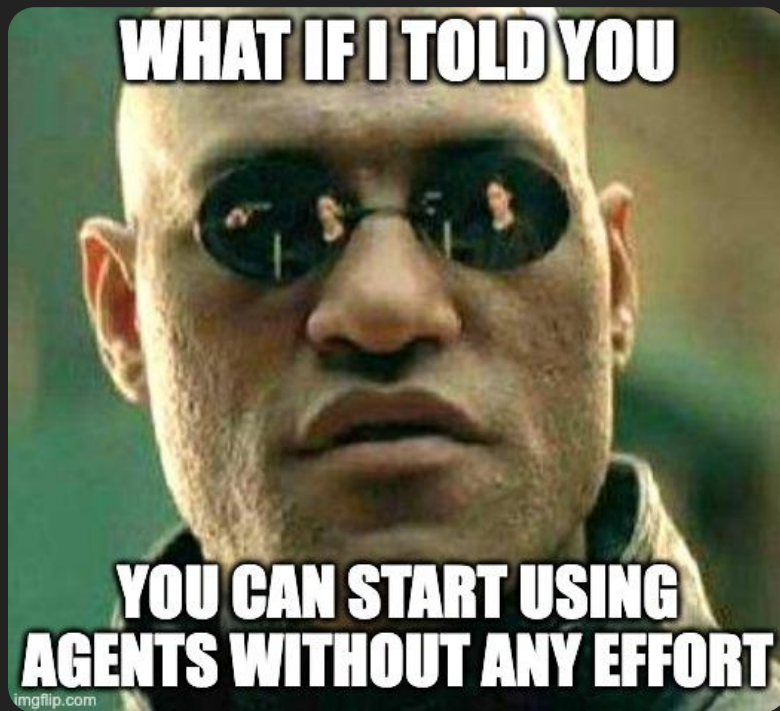


# MCP

- Standardized protocol for providing context to LLM
- Based on JSON-RPC 2.0
- Facilitates tool use and development











### Zencoder Demo APP 16:02

Hi Alex, I've completed the Jira issue for extracting namespace from JWT and using it in client configuration across languages. I've created a branch called 'demo' with the changes. The implementation extracts the namespace from JWT tokens and uses it in both Python and Go SDKs when no namespace is explicitly provided in the configuration or environment variables. Let me know if you need any clarification or have any questions!



### Zencoder Demo APP 16:44

Hi Alex, I've completed the task of generating unit tests for the `extract_claims_from_jwt` function. I've created a comprehensive test file with 100% test coverage for the token module. The tests cover all the functions in the module, including `extract_claims_from_jwt`, `get_tenant_id_from_jwt`, `get_addresses_from_jwt`, and `get_namespace_from_jwt`. All tests are passing successfully.



LET'S BUILD  
A CODING AI AGENT  
TO WORK FASTER!

I WANT AN AGENT  
THAT ANSWERS  
THE PM WHILE I CODE

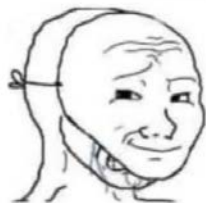


# What's next?





**Artists:**



**ai art will  
replace us**



**noooooooooooooooo**

**programmers:**



**ChatGPT will  
replace us**



**finally.**



## Experience



### Goose farmer

Self-employed

Jul 2023 - Present · 10 mos

On-site



### Microsoft

22 yrs 4 mos



#### Principal Performance Architect

Full-time

Jul 2022 - Jul 2023 · 1 yr 1 mo

Chehalis, Washington, United States



#### Principal Software Development Engineer

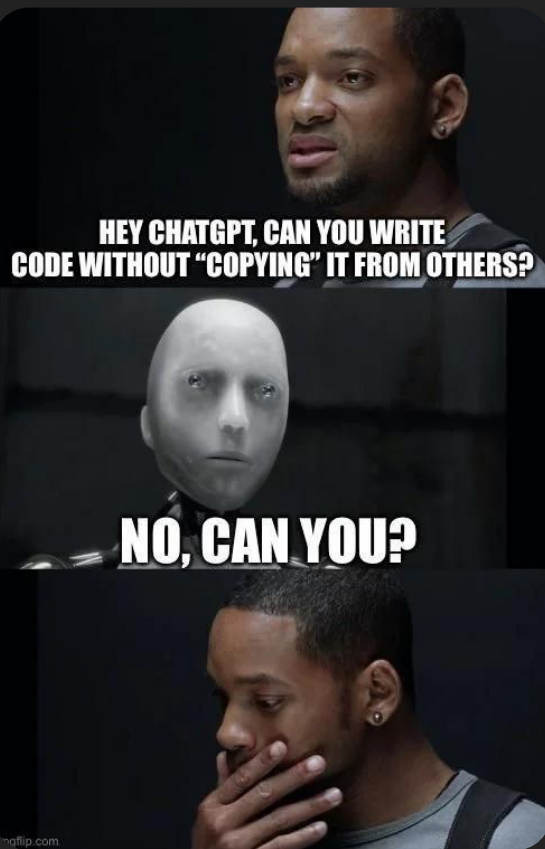
Apr 2001 - Jul 2022 · 21 yrs 4 mos

Redmond, WA

Azure Performance Team, August 2017 - Present

Office 365 Foundation Engineering... [see more](#)







Vibe  
coding



Vibe  
debugging

imgflip.com





**"AI IS GOING  
TO REPLACE MY  
PROGRAMMING JOB!"**



**"I'LL BE ABLE  
TO TELL AN AI TO DO  
MY PROGRAMMING JOB"**

*ProgrammerHumor.io*





# Get Started for Free

Conf42 ML'25



# Connect

© 2025 Zencoder AI Inc. All rights reserved