

Understanding Backends

17-316/616 Fall 2025

AI Tools for Software Development

<https://ai-developer-tools.github.io>

Austin Henley and Andrew Begel

Today

- Project Team Meeting
- Become a backend expert (or, Fake it til you make it)

Project Team Meeting

- Spend the next 15 minutes to meet with your team.
- Work on P4: Backend Development

Humans no longer necessary.

So we're getting rid of them. Replacement.AI can do anything a human can do – but better, faster and much, much cheaper.

Stupid.

Smelly.

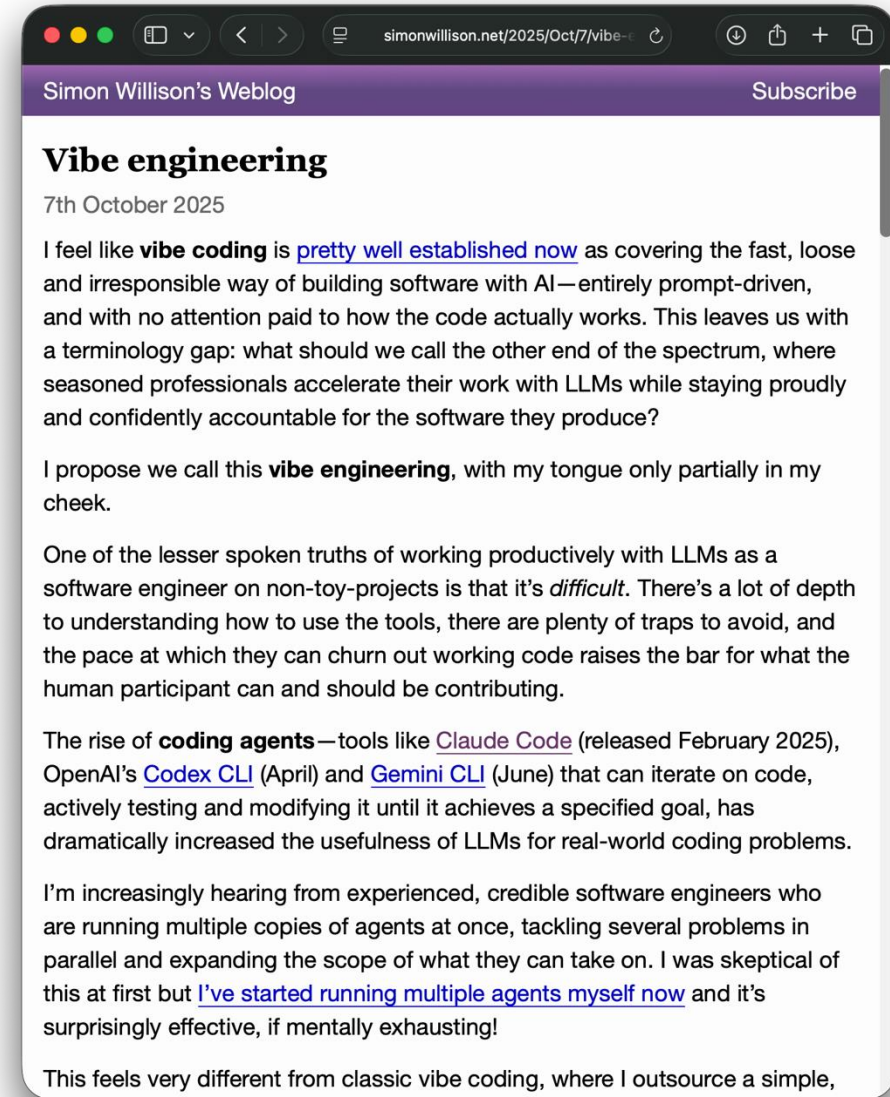
Squishy.

It's time for
a machine solution.



Vibe engineering?

- Vibe coding vs. vibe engineering
- How do you use AI for "actual" software development
- Simon Willison's blog
- <https://simonwillison.net/2025/Oct/7/vibe-engineering/>



Today's activity

- Work in pairs (not from your team)
- Pick one of your projects to learn about together (15 min)
 - Code author explains to their partner how a specific feature of their project's backend codebase works.
 - Open your project in Cursor. Walk partner through the code, in detail. *You* are the expert.
 - Partner takes notes and asks questions.
 - If either of you don't know what a technology is, how it works, or how the code actually functions as written in the codebase, ask an LLM on the code author's computer for help.
 - Be sure the LLM has access to the backend codebase, the dev spec, and the user story.
- Every partner will then explain to the class how the code author's code works, as if they were the new expert. (5 min each)

Explain ***one*** of these features

1. Working with a database—add rows, update rows
2. Talking to a third-party service , e.g., OpenAI, Maps
3. Asynchronously updating the UI after a remote function call
4. Design patterns, e.g., adapter pattern for file storage/search
5. How your code handles a server crash
6. How your code handles a network timeout on a remote function call
7. Using a caching service, e.g., Redis
8. Supporting multiple users of your app
9. Supporting multiple simultaneous users of your app
10. Utilizing local services (e.g., mic, camera, photo album, USB devices)

Coming Next...

- Homework
 - Reflection 7 due Tuesday night 11:59pm
 - P4 due Wednesday night 11:59pm
- Next class: Discussions about Reflection 7