SONALAKE

A Year of Copilots

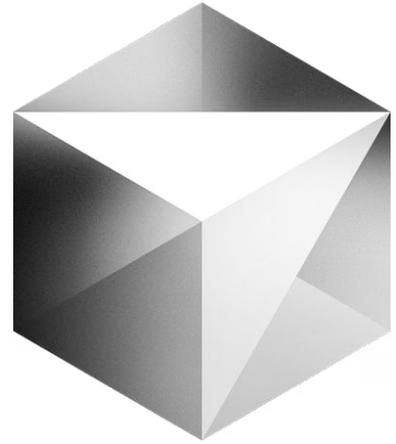## An experiment in GenAI tooling

Ciaran Treanor

CTO Sonalake

Software, teams, telecoms, data, distributed systems.
Running, sailing, armchair rugby, live music.

Why Bether?
...ruving ...en AI tool trials

tool tools

Tool Choices

Features

- Tab completions

- Multi-line edits

- Smart rewrites

- Cursor prediction

- Chat about codebase

- Provide visual context

- Reference web content

- Reference library documentation

- Multi-file generation and update

- Check logs

- Multi-file edits

- Compex end-to-end agentic task completion

- Figma to code

- Choose your model

Use Cases

- Ease onboarding

- Write code!

- Create tests

- Create documentation

- Review code

- Draft commit messages

- Assist in code modernisation

- Learning new things

- Validating ideas

- Making stuff idiomatic

- General advice

Did we Learn Anything?

TRUST NO ONE

Reasonable Question

I need some advice setting up a static site on AWS and securing it with AWS Cognito.

Setting up a static site on AWS and securing it with **AWS Cognito** involves several steps. Here's a clear and concise roadmap:

Terrible Advice

You've made the S3 bucket public. Does that mean that people will be able to bypass authentication?

You're absolutely correct to flag that! Making the S3 bucket public in this setup **could allow unauthenticated access**, bypassing your intended Cognito authentication layer. Here's how to fix that and secure your static site properly:

Plausible but Incorrect

- Ignoring implied requirements

- Suggesting out of date information

- Ignoring existing types

- Inventing APIs

Code Reviews

Code Reviews

Anurag Bhagsain ✔
@abhagsain

Last week, we asked Devin to make a change. It added an event on the banner component mount, which caused 6.6M @posthog events in one week, which will cost us $733
Devin cost $500 + $733 = $1273 😢👍

Lesson - Review AI-generated code multiple times

GitHub APP 12:02 AM

1 new commit pushed to `main` by abhagsain

`3509a9d9` - fix: 🐞 $700 Devin mistake 🧑‍🦱

SlidesAI/slidesai-web

👤 Cognition

What else?

- Potential for large blast radius
  - Big PRs
  - Bottleneck

- Impact a function of experience level

- Output quality degrades as context fills

- Tools improved greatly over the 12 months

Feedback

- "I don't know if it really saves time for me"

- "Became friends really quickly"

- "Not using Google or Stack Overflow anymore"

- "Limited understanding - good prompts are key"

- "Great mentor"

Long-term Impact

Thinking, so you don't have to…

https://arxiv.org/abs/2409.09047

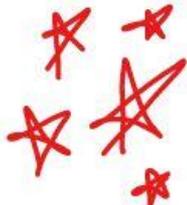## AI Meets the Classroom: When Does ChatGPT Harm Learning?

Matthias Lehmann,[1] Philipp B. Cornelius,[2] Fabian J. Sting[1,2]

[1]University of Cologne, [2]Rotterdam School of Management, Erasmus University

Abstract

In this paper, we study how generative AI and specifically large language models (LLMs) impact learning in coding classes. We show across three studies that LLM usage can have positive and negative effects on learning outcomes. Using observational data from university-level programming courses, we establish such effects in the field. We replicate these findings in subsequent experimental studies, which closely resemble typical learning scenarios, to show causality. We find evidence for two contrasting mechanisms that determine the overall effect of LLM usage on learning. Students who use LLMs as personal tutors by conversing about the topic and asking for explanations benefit from usage. However, learning is impaired for students who excessively rely on LLMs to solve practice exercises for them and thus do not invest sufficient own mental effort. Those who never used LLMs before are particularly prone to su... more from having acces... LLMs for learning exc... one's own abilities. O... support, however also t...

Matt Novak @paleofuture.bsky.social · 5mo
AI folks have now discovered "thinking"

Steph Smith ✓
@stephsmithio

Follow

Sometimes in the process of writing a good enough prompt for ChatGPT, I end up solving my own problem, without even needing to submit it.

2:16 PM · 7/29/24 · 1.7K Views

ALT

https://bsky.app/profile/paleofuture.bsky.social/post/3kyhb2fd2cd2u

A strong negative correlation (r = −0.75) between cognitive offloading and critical thinking further supports this interpretation. As individuals increasingly offload cognitive tasks to AI tools, their ability to critically evaluate information, discern biases, and engage in reflective reasoning diminishes. This relationship underscores the dual-edged nature of AI technology: while it enhances efficiency and convenience, it inadvertently fosters dependence, which can compromise critical thinking skills over time.

https://www.mdpi.com/2075-4698/15/1/6

Decline in Knowledge Sharing

Decline of questions on StackOverflow
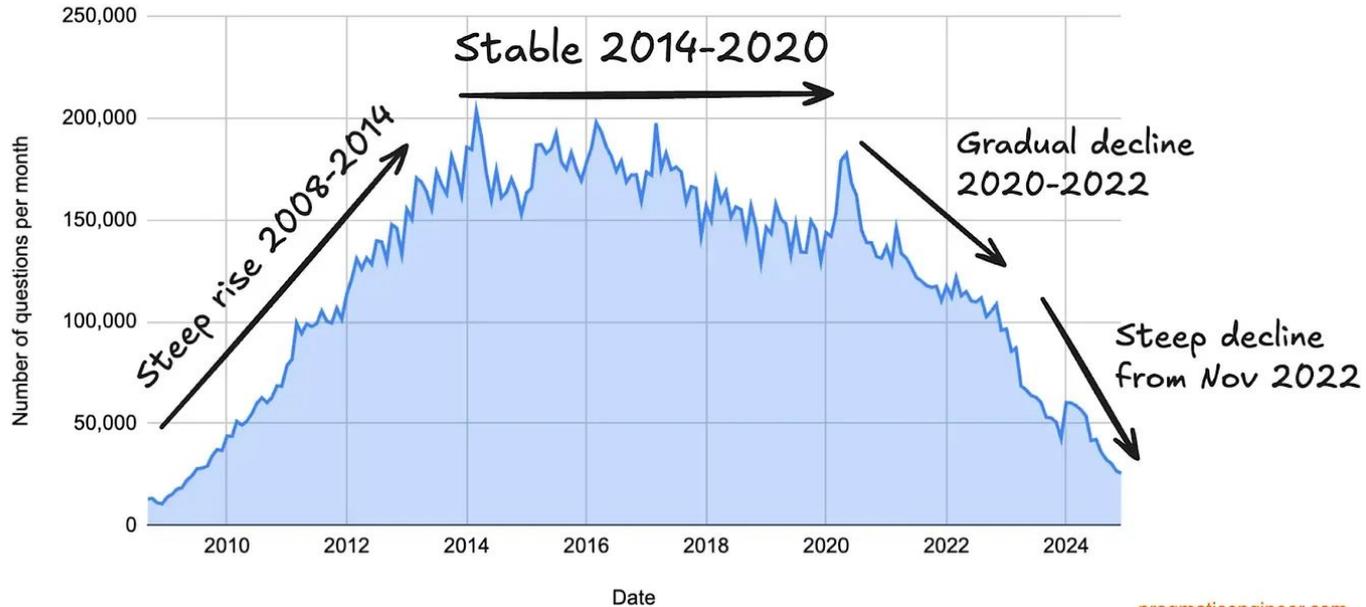
pragmaticengineer.com

Advice

- Don't compete with AI for your job, use AI to learn how to do that job better

- Foster a culture where trying new AI tools is encouraged

- Keep humans in the loop (for now!)
  - Architecture
  - Code review

- Landscape changing quickly - new tools and capabilities arriving all the time
  - Choose one that works for you
  - Develop proficiency
  - Avoid flipping between tools too much

Future

- Tooling will evolve to produce better than approximately correct code

- (Some) engineers will evolve from low-level dev to big-picture system design

- Communication skills will become an increasingly important differentiator

- Delegate tasks to specialised LLMs (via agents?)

Thank you!

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