

Six reasons you should not be using generative AI

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“AI”?

- ▶ “AI” has become a meaningless marketing buzzword
- ▶ There are many different forms of “AI”, some of which are well-understood and have been around for decades
- ▶ Mostly what people mean these days are Large Language Models (LLMs)

How do Large Language Models (LLMs) work?

- ▶ Trained on a massive amount of input taken from the Internet (expensive, one-time process)
- ▶ Learn to predict which word is most likely to come next given some input (multiplying giant matrices of numbers; each word gets a number)
- ▶ Generate output by repeatedly predicting next word, then feeding input + previously generated words back in

Consequences

- ▶ No concept of what is true/correct; just generating likely/plausible output
- ▶ No memory or introspection; no ability to learn

Learning

- ▶ Learning = engagement + cognitive effort
- ▶ You are probably bad at judging how much you are learning
- ▶ Your Brain on ChatGPT: Accumulation of Cognitive Debt when Using an AI Assistant for Essay Writing Task
- ▶ The Generative AI Learning Penalty: Evidence from Chinese Secondary Education

Correctness

- ▶ Bullshitting/hallucination machines
- ▶ Try having LLMs tell you about something you are an expert in!
- ▶ Coding: long-term technical debt; 10x as many security bugs!

Economics

- ▶ Everyone will be requiring AI? Practice using AI now or be left behind??
- ▶ Companies are not seeing much ROI
- ▶ Using AI is easy—not a difficult, valuable skill

Environment

- ▶ Data centers use a massive amount of electricity and water
- ▶ Google used to have a “net zero” goal
 - ▶ Energy usage up 27% over last year, double since 2020
 - ▶ Carbon emissions up 70% since 2020
- ▶ Many data centers built in water-stressed areas

Justice

Generative AI systems are built on a foundation of exploited labor:

- ▶ Low-paid human workers
 - ▶ evaluate traumatizing, toxic garbage in order to train AI systems not to generate it
 - ▶ take care of the “last mile” of “AI” services
- ▶ Training on copyrighted work with no compensation or acknowledgement of copyright holders

Mental Health

- ▶ We are much too quick to assign human characteristics to things
- ▶ Chatty, sycophantic LLMs tap into an innate desire for companionship and affirmation
- ▶ Many examples of people becoming overdependent on LLMs, and sometimes delusional