

Why is ChatGPT so Important?

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10 Years of AI History:

AlexNet

AlphaGo

Attention Is
All You Need

ChatGPT

2012

2015

2017

2022

Key Points

ChatGPT-like models:

- ① **Memorize**
- ② **Interact with humans**
- ③ **Improve personal performance**

We recruited **95** developers, and split them randomly into two groups.

We gave them the task of writing a web server in JavaScript

45 Used
GitHub Copilot

78%
finished

1 hour, 11 minutes
average to complete the task



50 Did not use
GitHub Copilot

70%
finished

2 hours, 41 minutes
average to complete the task



Results are statistically significant ($P=.0017$) and the 95% confidence interval is [21%, 89%]



github.blog

**Can It
Change the World?**

World Wide Web

The WorldWideWeb (W3) is a wide-area [hypermedia](#) information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an [executive summary](#) of the project, [Mailing lists](#) , [Policy](#) , November's [W3 news](#) , [Frequently Asked Questions](#) .

[What's out there?](#)

Pointers to the world's online information, [subjects](#) , [W3 servers](#), etc.

[Help](#)

on the browser you are using

[Software Products](#)

A list of W3 project components and their current state. (e.g. [Line Mode](#) ,X11 [Viola](#) , [NeXTStep](#) , [Servers](#) , [Tools](#) , [Mail robot](#) , [Library](#))

[Technical](#)

Details of protocols, formats, program internals etc

[Bibliography](#)

Paper documentation on W3 and references.

[People](#)

A list of some people involved in the project.

[History](#)

A summary of the history of the project.

[How can I help ?](#)

If you would like to support the web..

[Getting code](#)

Getting the code by [anonymous FTP](#) , etc.

List of public corporations by market capitalization

1993

General Electric

Exxon Mobile

Walmart

Coca-Cola

Merck

Procter & Gamble

Berkshire
Hathaway

HSBC

IBM

2003

Microsoft

General Electric

ExxonMobil

Walmart

Pfizer

Citigroup

Johnson & Johnson

Royal Dutch Shell

BP

IBM

2013

ExxonMobil

Apple

Microsoft

Berkshire Hathaway

Walmart

Johnson & Johnson

General Electric

Google

Chevron

ICBC

2023

Apple

Microsoft

Alphabet

Amazon

Nvidia

Berkshire Hathaway

Tesla

Meta

TSMC

Visa

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Chevron

ICBC

2023

Apple

Microsoft

Alphabet

Amazon

Nvidia

Berkshire Hathaway

Tesla

Meta

TSMC

Visa

Toward AGI

Data usage

Text — **Absolutely yes**

Images — **First steps**

Video — **Not yet**

Society

First steps (RLHF)

Real world interaction

Seeing — **No**

Hearing — **No**

Tasting — **No**

Smelling — **No**

Touching — **No**

Next steps?

3M:

Multi-modality

Multi-task

Multi-agent



Developing principles of:

External Memory and Continual Learning

Curiosity

RL Human feedback -> **RL by AI-generated feedback**

**The Race
Has Just Begun**