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Cybersecurity: How  
Blockchains Can Help



Build Your First  
AI Agent

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# OpenSource

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## BLOCKCHAIN FACTS

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# Exploring GPT4All, the Local LLM Desktop App

Developed by Nomic AI, GPT4All is a free-to-use, locally running chatbot that offers offline access, privacy, customisation and cost savings. And it does not need a graphics processing unit or GPU to function.



**F**rom the Stone Age to the Electronic and Information Age, humanity has seen significant technological advancements that make lives easier. Various AI tools are now available at our fingertips, with AI bots or assistants helping us plan our day by sending us reminders, answering questions, and much more. The remarkable capabilities of AI tools and applications include generating human-like text, language translation, creative content writing, content summarisation, and more.

Large language models or LLMs are powerful models trained on massive datasets that can produce human-like text. They can even help professionals at an advanced level, such as assisting in code generation, contributing to scientific research, etc.

State-of-the-art LLMs have a few limitations. They require costly infrastructure, are dependent on the internet, and may not be secure or user-friendly. Imagine if you have an alternative AI tool that can run on your local machine, which is open source, free of charge, does not require an internet connection, and does not need any coding knowledge. Yes, you heard that right! This game-changer AI model is Nomic AI's 'GPT4All', the open source, local LLM desktop application.

## What is GPT4All?

GPT4All is a free, open source platform created by Nomic AI (a company that builds tools for interacting with AI datasets and running AI models on consumer computers) to train and deploy powerful and customised LLMs

that run locally on computers. In other words, it is a free-to-use, locally running, privacy-aware chatbot. The key highlight is that it doesn't require any graphics processing unit (GPU) or internet connectivity.

Let's begin with how GPT4All stands out compared to the traditional LLMs, which require powerful servers in data centres, mostly cloud-based. When you use ChatGPT and provide a question or instruction as a prompt, the request is sent to OpenAI's servers via the internet. LLMs running on the servers process the request, and the response is sent back to the user. In contrast, GPT4All doesn't rely on any remote server, can work based on the local execution of LLMs, and runs the powerful AI models directly on the user's devices such as laptops, personal

Feature	GPT4All	ChatGPT
Underlying model	Open source models (e.g., Llama, GPT-J)	GPT-3.5 or GPT-4 (OpenAI)
Accessibility	Can be run locally on personal devices	Primarily accessed through OpenAI's website or API
Cost	Free (depending on the model used)	Free tier available; paid 'Plus' subscription for GPT-4 access
Customisation	More customisable, allows for fine-tuning with specific datasets	Less customisable and limited to OpenAI's pre-trained models
Data privacy	Potentially more private as it can be run locally	Data may be stored and used by OpenAI
Internet access	Depends on the model; may require internet connection for some tasks	Can access and process information from the internet
Multimodal capabilities	Limited, primarily focused on text	GPT-4 has some multimodal capabilities (image and text), but not fully implemented in ChatGPT yet
Performance	Varies depending on the model; generally considered less powerful than GPT-4	GPT-4 is considered one of the most powerful language models available
Technical expertise	May require more technical knowledge to set up and use	User-friendly interface; easier to use for non-technical users
Community support	Growing community, but potentially less extensive than ChatGPT	Large and active community, with extensive resources and support
Updates and development	Dependent on the open source community; updates may vary	Actively developed by OpenAI, with regular updates and improvements

computers, and even mobiles or tablets.

## Advantages of GPT4All

**Privacy:** When the LLM is run locally, there is no need to send precious data to any remote server. This means data is safe in your local device, which improves privacy.

**Cost:** Since the LLMs are run locally, you do not need to pay to access any cloud-based servers that run LLMs based on usage. The local execution helps to cut costs.

**Offline access:** The local execution of LLMs allows you to access your data from your machines directly without an internet connection. This can be beneficial when internet connectivity is not available or is unreliable.

**More control and customisation:** Running the LLMs locally provides more control. There are also more possibilities to customise and modify the model. You can fine-tune it or

integrate it with various software based on your requirements.

## Getting started with GPT4All

You can set up GPT4All just the way you do so for any other application on your device. The first step is to download and install the application; next, select the files you want to analyse, and lastly, you can ask questions as prompts.

Follow these steps to download and install GPT4All.

1. For installation, find the Windows, Mac, or Linux download files at <https://www.nomic.ai/gpt4all>.
2. Download a model. It's recommended to start with Llama3, but you can browse more models ([https://docs.gpt4all.io/gpt4all\\_desktop/models.html#example-models](https://docs.gpt4all.io/gpt4all_desktop/models.html#example-models)).
3. Once downloaded, go to Chats.
4. Click on *Load Default Model* (will

be Llama 3 or whichever model you downloaded).

5. Try the example chats or your own prompts.

For more details on installation, setting up things, cookbooks, FAQs, and troubleshooting tips, you can refer to the GPT4All documentation at <https://docs.gpt4all.io/index.html>.

## Use cases and applications of GPT4All

### Developing new applications:

Developers can leverage the open source nature of GPT4All that fosters community-driven development. New applications or specialised tools can be developed using the existing code base.

### Research and experimentation:

Researchers can study how LLMs work, check model biases, test new prompt techniques and strategies, etc, without bothering about cost or API usage limit.

**Writing assistance:** Unlike other



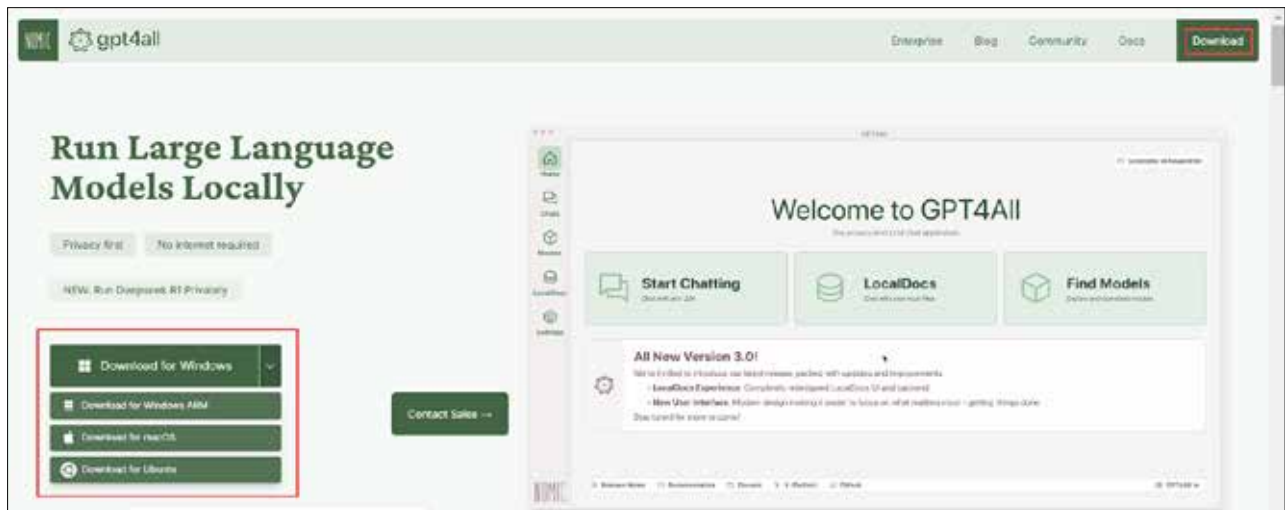


Figure 1: GPT4All

AI tools like ChatGPT or Gemini, you can use GPT4All for a variety of writing tasks ranging from writing email content to creative writing such as poems or scripts without the need for internet access.

**Summarisation:** GPT4All can be used for quick and efficient text summarisation. This helps to clarify the core concept of large books/web pages without having to read the entire content.

**Language translation:** The offline capability of this tool can be utilised by travellers for quick language translation or to learn a new language without worrying about internet connectivity.

**Education and skill development:** Students can use GPT4All for educational purposes such as to learn new languages, analyse data, generate questions, simplify complex content, skill development, and much more. **END** 🐧

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