



# **DECENTRALGPT WHITEPAPER**

## **AI+DePIN+AGI**

Creating a Path to Decentralized AGI

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## 1 INTRODUCTION

In the field of artificial intelligence, especially in the development and application of large-scale language models such as GPT series, The dependence on centralized computing resources has become a major bottleneck. This dependence not only incurs high costs, but also raises serious concerns about data privacy, accessibility and transparency. The data processing and storage of centralized systems are usually concentrated in a few large data centers. This is not only an easy target for hackers, but also may lead to excessive centralization of control over data,thus affecting the fairness and transparency of the data.

DecentralGPT presents an innovative solution to the centralization model. As a decentralized AI large language model inference network, DecentralGPT supports a variety of open source large language models. It is committed to building a secure, privacy-preserving, democratic and transparent Artificial general intelligence (AGI) network.The distributed network nodes jointly complete data processing and model inferencetasks,DecentralGPT greatly reduces the dependence on a single computing center and enhances the anti-attack capability of the system.And improve global computing efficiency and efficient use of resource.

In addition, the decentralized nature of DecentralGPT ensures the democratization of technology. So that users from different regions and backgrounds can participate and benefit equally. By implementing end-to-end encryption and strict data access controls across the network, it protects user data from unauthorized access or abuse, thus solving the privacy protection problem in the traditional centralized model. At the same time, the open source nature of DecentralGPT also promotes the collaboration of the global developer community and promotes the rapid iteration and optimization of technology.

By breaking the limitations of traditional AI models, DecentralGPT has opened up a new path for the development of global AI technology. It heralds a more secure, fair and open AI future.

## **2 Global AIGC Industry Analysis and AGI Outlook**

### **2.1 Market Value of AIGC Industry**

AI Generated Content (AIGC) industry is rapidly becoming an important area of global scientific and technological development, covering the automated generation of a wide range of content from text, images, video to music. With the progress of technology and the expansion of application fields, AIGC is gradually changing the operation mode of media, advertising, entertainment and education industries. Especially in terms of content production, personalized marketing and user interaction experience, AIGC provides efficient and cost-effective solutions, enabling businesses to create and distribute content at unprecedented speed and scale.

In many important areas, such as media publishing, digital advertising, social media content production and internal content management, AIGC technology has become a key tool for improving productivity and content personalization.

#### **Media and news**

Case: The New York Times uses AIGC technology to automatically generate sports news and financial bulletins. It achieves faster content update speed than manual work, and dynamically adjusts reports according to readers' feedback.

Data: Media companies utilizing AIGC experienced a 40% reduction in average content production time and a 30% increase in content relevance and audience engagement.

#### **The advertising industry**

Case: a leading online retailer used AIGC to create personalized ads and saw a 20% increase in click-through rates. The return on advertising investment has increased significantly.

Data: AIGC technology has increased the click-through rate of advertising campaigns by 20% -

30%, and increased the cost-effectiveness of advertising by 50% compared with traditional methods..

### **Educational Technology**

Case: Online education platforms use AIGC to generate personalized learning materials and interactive learning experiences for each user. Students' learning efficiency has increased by an average of 35%.

Data: Educational institutions that adopted AIGC saw a 40% increase in student engagement and a 50% increase in student satisfaction.

## **2.2 Potential Growth of Future Market Size**

Based on the latest market research, the market size of AIGC industry is expected to reach trillions of dollars in the next decade. This growth is mainly driven by the following:

- ✓ Technological innovation: With the progress of AI and machine learning algorithms, generative models are becoming more and more accurate and efficient. This is especially true of the latest generation of language models, such as GPT and BERT, which are able to generate text and images that almost match those of humans.
- ✓ Enterprise demand growth: Digital transformation has driven a sharp increase in enterprise demand, and enterprises not only need to generate a large amount of content quickly. There is also a need for this content to be highly personalized and adaptable. It is expected that by 2025, at least 60% of large enterprises in the world will use AIGC technology.
- ✓ Cost Reductions: AIGC can reduce content production costs by up to 70%, especially where large-scale content generation is required. 90% of the enterprises surveyed said that cost savings were the main motivation for their adoption of AIGC technology.
- ✓ Development in emerging markets: The demand for AIGC in emerging markets is growing rapidly as Internet coverage and technology acceptance increase, especially in Asia and Africa, the market growth rate is expected to exceed the global average, reaching an average of more than 35% annually.

## **2.3 AGI's Future Outlook**

Artificial general intelligence (AGI) is the ultimate goal in the field of AI, which represents an intelligent system. Can rival or even surpass humans in their ability to understand, learn, and adapt to new situations. The realization of AGI will be a major breakthrough in human history. It means that machines can perform any cognitive task that human intelligence can accomplish.

We expect AGI to arrive in 5-10 years, and it has a wide range of potential applications. Applications range from complex decision support systems to fully autonomous service robots. A large number of scientists and researchers are working on how to make machines have a wide range of intelligence and adaptability. This involves breakthroughs in areas ranging from reinforcement learning to autonomous affective cognition.

Going forward, AGI could bring fundamental changes to society. In the medical field, AGI can help design personalized treatment plans and perform complex surgical procedures; In the field of environmental protection, AGI can analyze and predict environmental changes and propose effective protection measures. In addition, AGI has great application potential in education, finance, law and other fields. It can provide more accurate and efficient services.

## **2.4 Role of DecentralGPT in AGI**

DecentralGPT plays a vital role in the development of AGI. As a decentralized AI model inference network, DecentralGPT offers a new possibility through its unique decentralized network structure, support the development of AGI and address some of the challenges faced by existing centralization models.

First of all, DecentralGPT's decentralized architecture can significantly improve computational efficiency and reduce operating costs. In the traditional centralized model, all data and computing needs are concentrated in a few large data centers. This not only increases costs, but can also lead to processing bottlenecks and delays. Through distributed computing resources, DecentralGPT can balance the load on a global scale and achieve rapid response and efficient operation.

Second, DecentralGPT strengthens the security and privacy of data. In this network, data can be processed without leaving the local environment. It effectively reduces the risk of data leakage and abuse. This is particularly important for building trust and promoting AGI technology, especially when dealing with sensitive information such as medical records and personal financial data.

Finally, DecentralGPT supports the democratization and globalization of AGI technology. It provides equal opportunities for researchers and developers around the world to participate, regardless of their location. You can use this platform to develop and test AGI applications. This helps to promote global innovation and accelerate the research and application of AGI technology.

Through these mechanisms, the DecentralGPT not only supports AGI's technological advances, but also provides a new perspective and tool for its social implementation and ethical discussion.

## **3 Overview of DecentralGPT**

DecentralGPT is a decentralized AI large language model inference network that supports multiple open source large language models. Its design goal is to build a universal artificial intelligence

nce (AGI) that is secure, privacy-preserving, democratic, transparent, open source, and available to everyone. This network takes advantage of many advantages of decentralized technology. Include enhanced data security, privacy protection, and improved efficiency and reduced costs through distributed computing resources.

### 3.1 Core Features of DecentralGPT

- ✓ Privacy and security: In DecentralGPT, data is handled according to strict privacy protection standards. Data can be encrypted at the local node to minimize the risk of privacy disclosure caused by centralized data processing.  
  
e the stability and attack resistance of the system.
- ✓ Democratic access: The decentralized structure allows users and developers from all over the world equal access to AGI resources. Users in both developed and developing countries can use this platform to develop and innovate AI applications.
- ✓ Improve efficiency and reduce costs: By leveraging globally distributed computing resources, DecentralGPT optimizes resource usage. Increase processing speed while reducing the cost of centralizing computing resources.
- ✓ Drive technological innovation: Open model support and global participation promote rapid iteration and innovation of technology. Accelerating the development of artificial intelligence.
- ✓ Enhancing social equity: DecentralGPT helps to bridge the technology gap by making advanced AI technologies accessible and available to users around the world. Enhance the overall technological level and application capability of the global community.

These features and goals of the DecentralGPT demonstrate its potential role in moving the field of artificial intelligence forward. Especially in promoting the development of AGI in the direction of democratization and globalization.

#### ✓ Democratizing Technology Access

DecentralGPT significantly enhances global users' access to advanced artificial intelligence technology through its decentralized structure. In traditional centralized models, advanced AI services are often concentrated in technologically advanced regions, leaving other areas unable to enjoy the same level of service due to resource and technology limitations. DecentralGPT breaks down these barriers by utilizing globally distributed nodes, ensuring that users in any region can receive fast responses and high-quality AI processing capabilities. This widespread approach greatly promotes balanced technological development worldwide, allowing individuals and businesses in less technologically developed regions to benefit from AI advancements.

#### ✓ Environmental Friendly

DecentralGPT's decentralized network reduces reliance on a single data center, which not only increases system redundancy and resiliency, The environmental impact has also been dispersed. In centralized systems, large data centers consume huge amounts of power and generate large amounts of heat. Distributed systems

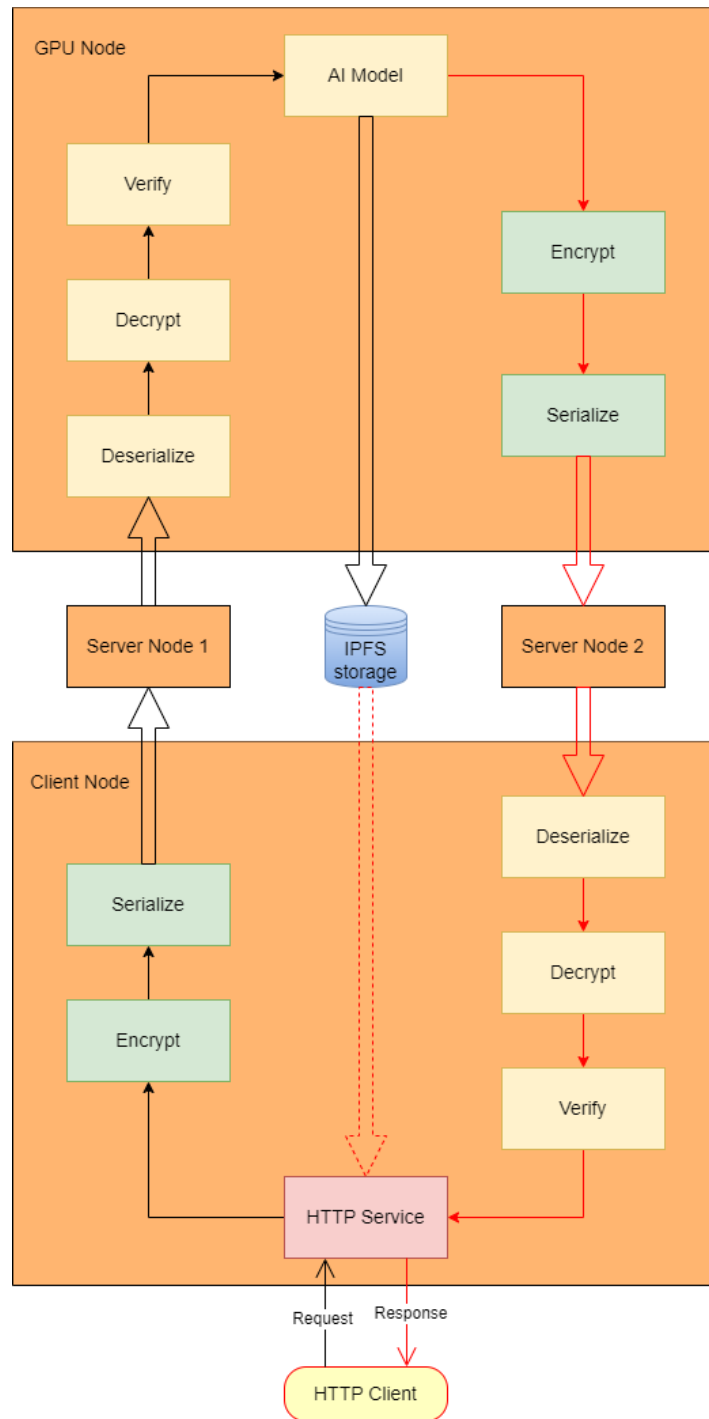
#### ✓ Enhanced Data Sovereignty and Control

DecentralGPT provides greater data sovereignty and control through its decentralized architecture. The user's data is processed in the local node and does not need to be transmitted to the remote server. In this way, users have more direct control over their data and reduce the risk of unauthorized access or abuse of data. In addition, DecentralGPT enforces strict data governance policies, supports compliance with regional regulations, Such as the European Union's General Data Protection Regulation (GDPR). This makes the system more suitable for application scenarios requiring strict data protection, such as medical, financial and other fields. It provides users and enterprises with higher trust and compliance.

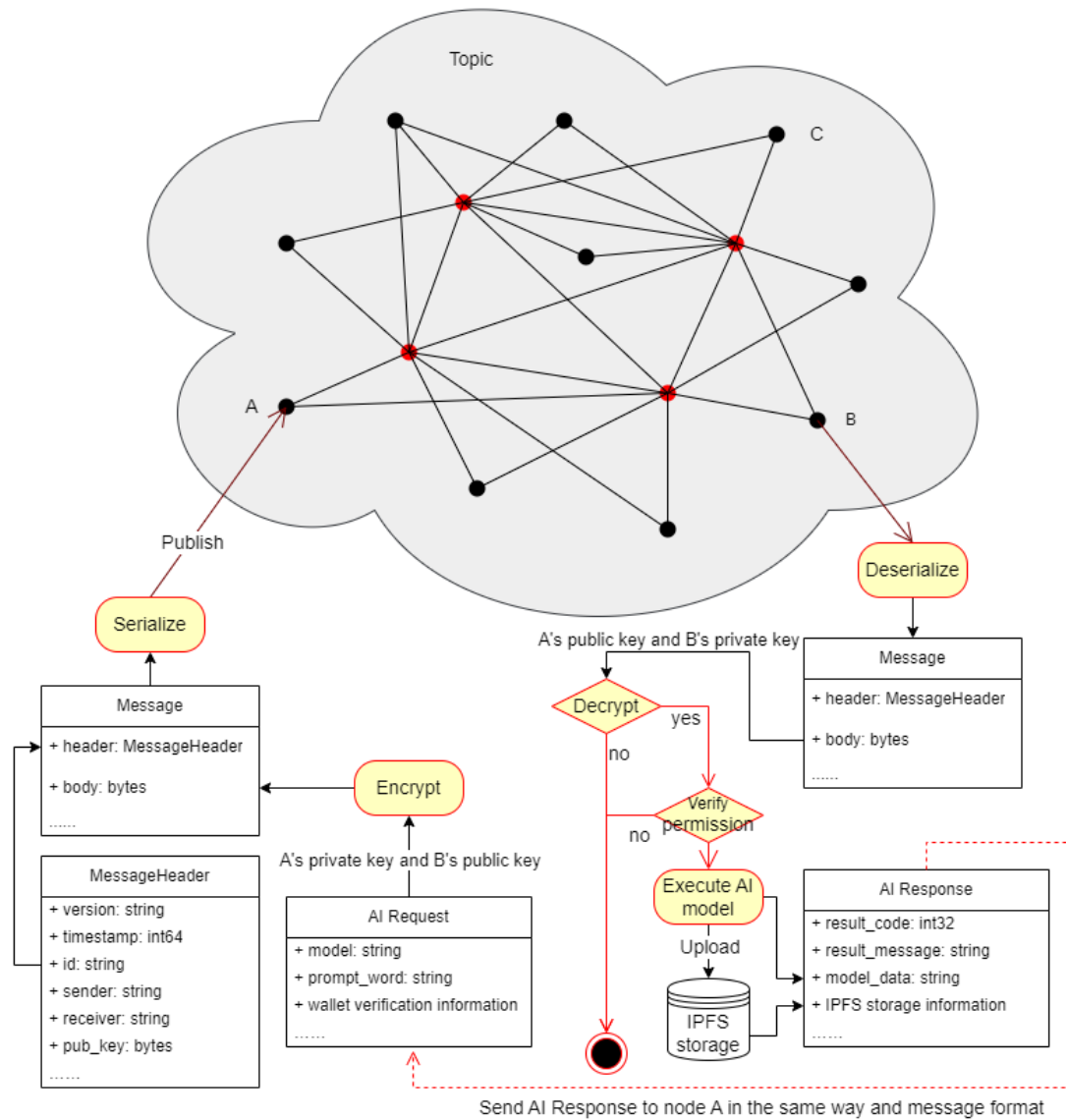
Through these unique values, DecentralGPT is more than just a technology product. It is also an important force to promote the sustainable development of society, economy and environment.

## 4 DecentralGPT Technical Architecture

To design a technical architecture diagram for DecentralGPT, we started with its core components and how it works. The following is an overview of the DecentralGPT technical architecture and a simplified architecture diagram: **System Technical Architecture Diagram and Code Logic Diagram**







## 4.2 DecentralGPT System Architecture Details

### 4.2.1. User Interface

Users can interact with the DecentralGPT system through the interface of any client node. The interface handles the user's requests, which can be queries, data entry, or administrative commands to the AI model. Duties of the user interface include collecting user instructions and data, encrypting this information, and sending it to the distributed GPU nodes of the system for processing.

cessing.

#### **4.2.2. Distributed Coordinator**

Another function of the client node is the distributed coordinator, which can query the GPU node status of the whole network. Including task allocation and load balancing. It receives the encryption request from the user interface and selects a list of GPU nodes that meet the requirements. Then the random machine on the blockchain randomly selects a GPU node to execute the task. The coordinator also monitors the performance and resource usage of each node to optimize task allocation and system efficiency.

#### **4.2.3. Distributed Computing Node**

Node composition: Compute nodes form the core of DecentralGPT, and each node is equipped with GPU. The inference tasks of the AI model can be performed individually or collectively. These nodes are distributed in different locations around the world, forming a powerful distributed AI inference computing network.

Operating system and software: Each node runs the Ubuntu operating system or other systems. The necessary software and libraries are installed to support the running of the AI model. This configuration ensures the compatibility and efficiency of the system.

P2P network: The nodes are connected through a peer-to-peer (P2P) network. This structure enhances the reliability and data transmission speed of the network. P2P networks facilitate direct data and resource sharing among peers.

#### **4.2.4. Data storage and sharing**

IPFS technology: The system uses IPFS (Interplanetary File System) as one of the solutions for data storage and sharing. IPFS is a distributed file system that stores large amounts of data and ensures that the data is persistent and highly accessible.

Other web3 storage public chains: interact with multiple storage public chains, encrypt and store user data. Holding the private key of the data can decrypt the data end-to-end.

File storage and retrieval: All data processed through the system, including user data and model-generated data. All of them are stored through distributed storage network, which ensures the security and integrity of data. GPU nodes can efficiently retrieve and access this data.

#### **4.2.5. Distributed GPU Machines**

Distributed GPU machine: The distributed system includes a GPU node network, which is composed of distributed single nodes or cluster nodes. The GPU node program can invoke the AI model to perform inference on the GPU machine.

AI model execution: The inference of AI model mainly depends on the powerful computing power of GPU. AI model can effectively use GPU for high-speed computing.

#### **4.2.6. System Architecture Summary**

The DecentralGPT system provides efficient and scalable AI model inference capabilities through its distributed architecture. By using distributed storage technologies such as IPFS and GPU acceleration, as well as powerful P2P networks, DecentralGPT is able to handle large-scale data requests while maintaining data security and privacy. The system is designed to support highly concurrent AI processing tasks while reducing latency and increasing the overall reliability of the system.

## **5 Core Functions of DecentralGPT**

DecentralGPT, like Chat GPT, is an artificial intelligence system based on a large language model. However, its function and application are enhanced by the method of decentralization. Here are some of the core features of DecentralGPT and their detailed descriptions:

### **5.1. Natural language understanding and generation**

DecentralGPT can understand and generate natural language. This allows it to have smooth conversations with users, answer questions, write articles, write code, or generate any form of textual content. This function is based on advanced deep learning models, such as GPT series. It learns language patterns and knowledge by analyzing large amounts of text data. In DecentralGPT, this capability is not limited to a single centralized server, but is performed by globally distributed nodes. It ensures the scalability and response speed of processing power, and enhances data privacy protection through localization.

### **5.2. Multi-language support**

In contrast to ChatGPT, DecentralGPT was designed with the importance of multilingual support in mind, allowing it to serve users worldwide. It takes advantage of the geographical and cultural diversity of distributed nodes to optimize and customize the processing power of different languages. For example, a node in France might be better at handling French content, The node in Japan optimizes the processing of Japanese. This distributed and localized processing not only improves the accuracy of language processing, but also speeds up response time.

### **5.3. Personalized user experience**

DecentralGPT enhances the user experience by analyzing the user's interaction history and preferences to provide customized responses and recommendations. This function is enhanced under the decentralized architecture, because each node can store and process information related to specific users. Without the need to transmit the data back to a central server. This not only improves the efficiency and speed of data processing, but also increases the security and privacy protection of user data.

### **5.4. Seamless integration and scalability**

DecentralGPT allows developers and enterprises to easily integrate and extend services through open APIs and an extensive network of nodes. This platform supports multiple programming languages and frameworks, making it easy and fast to integrate from small applications to large enterprise systems. In addition, due to its distributed nature, DecentralGPT can dynamically adjust resources on a global scale in response to changes in demand. Thereby providing seamless scalability.

### **5.5. Enhanced privacy and security**

In a decentralized DecentralGPT system, user data is encrypted at the local node. Only encrypted data is transmitted over the network. This strategy greatly enhances the security and privacy protection of data, because sensitive information does not need to leave the user's geographical location. In addition, the design of the whole system adopts the latest encryption technology and security protocol. Ensure the security of data during storage and transmission.

### **5.6. Highly customizable user interface and experience**

DecentralGPT provides a highly customizable user interface and interactive experience. Support enterprises and developers to customize the interface and functions according to their specific needs. Users can customize the interaction logic, interface style, and even functional modules according to the preferences of the target user group. Such as adding specialized commands or integrating specific external APIs. This high degree of customization allows DecentralGPT to be better integrated into a variety of business applications and services.

With these features, DecentralGPT not only provides powerful language processing capabilities similar to Chat GPT, it also improves the efficiency, scalability, privacy and security of the system through decentralization technology. This makes DecentralGPT a powerful AI platform for diverse global needs.

## **6 Distributed GPU Mining Mechanism**

DecentralGPT uses a distributed GPU mining mechanism, which not only emphasizes the contribution of computing power, but also play an important role in maintaining network liveness and support model development. The following is a detailed description of the mining mechanism:

### **6.1 DecentralGPT's Basic Framework for Distributed GPU Mining**

In the DecentralGPT ecosystem, mining rewards are an important means of motivating participants, including GPU miners and model developers. The total supply of tokens is 1 trillion, of which 40% or 400 billion DGC tokens are divided into mining rewards. These awards will be distributed through a gradual halving mechanism over the four-year cycle after launch. It means that the mining reward will be reduced by 50% every four years, thus controlling inflation and increasing the scarcity of tokens. Increase the potential value of the holder.

## **6.2 Mining mechanism details of DecentralGPT**

### **6.2.1. Network participation and reward conditions**

To participate in mining and receive DGC rewards, miners must use long-lease mode GPU machines that pledge DBC tokens in the DBC network. This requirement ensures the security of the network and the commitment of the participants. Whenever a user sends a request to one of these GPU machines, and the request is successfully processed, the machine is eligible for a DGC reward.

### **6.2.2. Reward Distribution Cycle**

Every 120 blocks, approximately once an hour, the network automatically performs a reward allocation, with a total of 5,707,763 DGCs per allocation. Miners can apply for their share of the reward at any time, and once any miner receives his reward, other miners will also automatically receive their share of the reward.

### **6.2.3. Proportion of computing power and reward calculation**

The specific amount of reward depends on the ratio of the computing power of each miner's machine to the total computing power of the network. For example, if a miner's GPU power is 1000 and the total power of the entire network is 1,000,000, then the miner will receive a 1% share of the reward. This way fairly reflects the actual value of each miner's contribution to the network.

### **6.2.4. Revenue allocation between model developers and GPU miners**

In this mining mechanism, the interests of model developers and GPU miners are balanced. Specifically, model developers can get 30% of the mining reward to reward their efforts in developing and optimizing AI models. GPU miners can get the remaining 70% reward to compensate them for the cost and effort they need to provide computing resources and maintain the network.

### **6.2.5. Sustainability of the system and automatic destruction mechanisms**

In order to maintain the long-term sustainability of the system, DecentralGPT also introduces an automatic destruction mechanism. All user payments (such as monthly fees) will be 100% automatically destroyed, which means that the relevant DGC tokens will be permanently removed from the market. Inflation is further controlled and the value of the remaining tokens is increased.

### 6.2.6. DecentralGPT Distributed Mining Mechanism Conclusion

Through this unique distributed GPU mining mechanism, DecentralGPT not only provides strong economic incentives for network participants, it also promotes the security and stability of the network. This mechanism ensures that the interests of participants are consistent with the overall interests of the network, and promotes the continuous development of technology and community. In addition, through DGC's token economics and reward allocation strategy, DecentralGPT builds an ecosystem that is scalable, efficient, and self-sustaining.

## 7 DGC Tokenomics Model

The DGC token is the core economic unit of the DecentralGPT platform, designed to support the operation of its decentralized AI network. Its economic model is based on a multidimensional framework that combines deflationary strategies, incentives, and sustainable development. The following is an in-depth analysis and innovative expansion of the DGC tokenomics model.

### 7.1 DGC Token Allocation

#### 7.1.1. Total supply and distribution

The total supply of DGC is set at 1 trillion. The distribution is as follows:

**Mining Rewards:** 40% (400 billion) to incentivize miners and model developers. This part aims to keep the network active and improve the quality of the model.

**Airdrop reward:** 10% (100 billion) is used to enhance community participation and expand user base.

**Team:** 10% (100 billion) is awarded to team members to reward the team's initial contribution and continued development.

**DGC Foundation:** 10% (100 billion) supports the operation of the Foundation and various project funding.

**Early investors and public sales:** 30% (300 billion) is used to raise funds to support the early development of the project.

#### 7.1.2. Deflation mechanism

DGC adopts a strong deflation mechanism, that is, 100% of the user's monthly and quarterly fees are destroyed. This means that all DGCs paid through subscription services will be permanent.

ently removed from the circulation market, thereby reducing the total amount of tokens in circulation. Increase the scarcity and potential value of tokens.

## 7.2. DGC Mining and Rewards

### ✓ Halving mechanism

The halving mechanism of mining rewards is designed to be halved every four years for 100 years until 400 billion rewards are completed. This long-term halving strategy helps keep the value of the token stable and growing over the long term.

### ✓ Distribution of rewards

70% of the mining output is allocated to miners who provide computing power, and 30% is allocated to developers who participate in the development of large models. This allocation method aims to balance the relationship between technology contribution and resource input, and stimulate the production of more high-quality AI models.

## 8 Roadmap and Plan

## 8.1 Roadmap

**May 2023:** The DecentralGPT project is established, defining the vision and mission of the project.

**June 2023:** the basic technology research and development was launched, including the preliminary design of decentralized network architecture and the development of smart contracts.

**July 2023:** Prototype development of the first version of the decentralized node was completed and internal testing was conducted to validate the basic functionality.

**August 2023:** The initial integration of the AI model is introduced, and the development work combined with the decentralized network is started.

**September 2023:** The preliminary design of the user interface was carried out to improve the user-friendliness of the system

**October 2023:** The preliminary data synchronization function between nodes is implemented, which enhances the stability and data consistency of the network.

**November 2023:** Adds advanced security features such as multi-factor authentication and end-to-end encryption to protect user data.

**December 2023:** Internal beta release completed

**January 2024:** The first round of product iteration was carried out based on the feedback from some internal test users, and the performance and scalability of the network were optimized.

**February 2024:** Enhanced capabilities of AI models, especially in natural language processing and content generation.

**March 2024:** Multi-language support is introduced to meet the needs of users worldwide.

**April 2024:** The user interface and experience are optimized to make the operation more intuitive and smooth.

## 8.2 Development Plan

**Q2 2024:**

Complete the further optimization of the AI model to improve the accuracy and response speed of the model.

Expand the scale of the decentralized network and add more nodes to improve the processing capacity and anti-attack capability of the network.

Introduce blockchain technology to further enhance data security and transparency.

**Q3 2024:**



Enable broader API access for developers and enterprise customers to build their own applications.

Start developing customized AI solutions for specific industries (such as finance, medical).

Strengthen community and developer relationships and increase engagement through workshops and hackathons.

Smart contract function is online, and test tokens are issued.

#### **Q4 2024:**

Complete the stable release of all major functions and prepare for full commercial promotion.

Carry out global market expansion strategy, especially market promotion activities in non-English speaking countries.

Introduce a continuous iteration cycle driven by user feedback and market demand.

#### **Q1 2025:**

Further improve and optimize the AI model, especially in understanding complex queries and multi-context communication. Strengthen cooperation with universities and research institutions to promote the research and application of advanced technology. Implement more sophisticated data analysis tools to help users better understand and use the DecentralGPT platform.