



AI Matrix

AI Matrix WHITE PAPER



FOREWORD

With the rapid development of science and technology, artificial intelligence (AI) has gradually become an important force in promoting social progress. However, the wide application of AI technology has also brought a series of challenges and problems, the most core of which is how to ensure the safety, reliability and sustainability of AI systems. To solve these problems, AI Matrix (AIMX) came into being, which is a fog computing platform built based on blockchain technology and decentralized ideas, designed to provide efficient, secure, and scalable AI computing services.

AI Matrix The platform adopts the decentralized design concept, and realizes the data security and privacy through distributed computing nodes and smart contracts and other technical means. At the same time, the platform also adopts fog computing technology to spread the data processing and analysis at the edge of the network, closer to the data source, reduce the delay and improve the efficiency of data processing. This design approach, which combines decentralized and fog computing technologies, provides effective solutions to the challenges and problems posed by AI.

AI Matrix Platform also has the characteristics of resource sharing. It allows users to rent their hardware or use others' computing power to meet their needs. This sharing economy model provides a cost-effective solution for users or businesses with a lot of computing needs. Through resource sharing, AI Matrix not only improves the utilization of resources, but also reduces user costs.

In addition, AI Matrix also has scalability and flexibility. Since it is a decentralized platform, it can easily expand its computing power to meet the growing demand. Meanwhile, AI Matrix also offers flexible pricing mechanisms that can be adjusted to users' needs and budgets.

The AI Matrix (AIMX) white paper aims to explore how to build a secure, efficient, and scalable AI computing platform to meet the current and future needs of AI development and application technologies. By building such a platform, we can better support the innovation and development of AI technology, and we can also provide effective solutions to the challenges and problems brought by AI. We believe that with the continuous development of AI technology, the AI Matrix platform will become an important force driving the development of the digital economy.

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1. Background overview

1.1 Development trend of artificial intelligence (AI)

As an important branch of computer science, artificial intelligence (AI) has received wide attention and application in recent years. With the continuous progress of technology and the continuous expansion of application, the development trend of AI is also constantly changing.

Further development of deep learning technology: Deep learning is one of the most important technologies in the field of AI, and it has made remarkable achievements in speech recognition, image recognition, natural language processing and other fields. In the future, deep learning technologies will continue to develop, improve the complexity and accuracy of models, and further expand the application field.

The rise of reinforcement learning: Reinforcement learning, a way to learning strategies by interacting with the environment, has succeeded in games, robot control, and more. In the future, reinforcement learning technology will be further developed to improve its generalization ability and adaptability, and provide solutions for more fields.

The rise of federated learning technology: Federated learning is a privacy-preserving machine learning method that trains models without sharing raw data. In the future, the federated learning technology will be further developed to improve its efficiency and security, and provide privacy protection for more scenarios.

1.2 Comparative analysis of cloud computing and fog computing

Cloud computing and fog computing are two computing methods developing rapidly in recent years, which have different characteristics and advantages in data processing, storage and application.

1.2.1 Technical Comparison

Data center location: Cloud computing stores the data in the cloud and provides external services through the Internet, while fog computing distributes the data processing and analysis process at the edge of the network, closer to the data source.

Computing method: Cloud computing adopts virtualization technology to provide services through the network, while fog computing adopts distributed computing method to gather computing resources (such as servers, storage devices, databases, etc.) into a virtual "fog", and then provides services through the network.

Communication protocol: Cloud computing uses the traditional TCP / IP protocol; while fog computing uses low-power WAN protocols such as 6LoWPAN and CoAP, which are more suitable for communication between Internet of Things devices.

1.2.2 Application Comparison

Cloud computing: suitable for scenarios that require large-scale computing and storage resources, such as big data analysis, online games, video streaming, etc. It can store the data in the cloud, provide external services through the network, and realize the centralized management and sharing of the data.

Fog calculation: suitable for the scenarios that need real-time, low latency and localized processing, such as smart home, industrial automation, intelligent transportation, etc. It can spread the data processing and analysis process around the edge of the network, closer to the data source, reducing the latency and bandwidth requirements of data transmission.

1.2.3 Cost Comparison

Cloud computing: Cloud computing requires large-scale data centers and network facilities. However, it can realize centralized management and sharing of resources, improve the utilization of resources and reduce operating costs.

Fog computing: Because fog computing gathers computing resources into a virtual "fog", the initial investment cost is relatively low. However, it needs to build more distributed nodes and network facilities, which increases operating costs and maintenance difficulty.

1.2.4, safety comparison

Cloud computing: Because data is stored in the cloud, centralized management and encryption protection can be realized, improving the security of data. At the same time, cloud computing providers usually take a variety of security measures and technical means to ensure the security and privacy of data.

Fog calculation: Because the data is scattered in the edge of the network, there are some security risks. However, the security and privacy of data can be guaranteed by adopting distributed encryption technology and security protocol. At the same time, fog computing can reduce the delay and bandwidth requirements of data transmission, and reduce the risk of data leakage.

1.3 The rise and importance of decentralized ideas

The idea of decentralization is a rising concept in recent years, which emphasizes the removal of central nodes in distributed systems and the distributed storage and processing of data. This idea has also been widely used in the field of artificial intelligence (AI), which is of great significance for promoting the development of AI technology.

1.3.1 The rise of decentralized ideas

The Development of Internet Technology: With the continuous development of Internet technology, people begin to realize that there are hidden security risks and efficiency problems in the centralized data storage and processing methods. In order to solve these problems, decentralized ideas are gradually emerging.

The emergence of blockchain technology: Blockchain technology is a decentralized distributed ledger technology, which realizes the distributed storage and processing of data by removing the central nodes. This technique provides technical support for the realization of decentralized ideas.

The Development of Distributed Computing: Distributed computing is a technique that assigns computing tasks to parallel processing on multiple nodes. With the development of distributed computing technology, people began to realize the importance of decentralized ideas in distributed computing.

1.3.2 The Importance of decentralized ideas

Improve data security: decentralized ideas can realize the distributed storage and processing of data, and avoid the security risks brought by centralized data storage. At the same time, because the data is distributed on multiple nodes, even if some nodes are attacked or damaged, it will not cause the collapse of the whole system.

Improve data processing efficiency: decentralized ideas can realize distributed processing of data and assign computing tasks to multiple nodes for parallel processing. This can make full use of computing resources and improve the efficiency of data processing.

Promoting innovation and competition: Decentralized ideas can promote innovation and competition. With no central node to control the entire system, anyone can participate in the system to contribute themselves. This can stimulate people's spirit of innovation and promote the development of technology.

Cost reduction: decentralized ideas can realize the sharing and reuse of resources, and reduce the construction and operation costs of the system. At the same time, without the absence of central nodes, the maintenance and upgrade costs of central nodes can be reduced.

2. An Overview of the AI Matrix platform

2.1 Introduction to the AI Matrix Platform

AI Matrix is a platform focused on AI designed to provide performance evaluation and benchmarking for AI hardware platforms and software framework. The platform is based on blockchain technology and decentralized ideas, using fog computing technology, providing a comprehensive, objective and fair performance evaluation benchmark test platform for the AI industry.

2.2 AI Matrix Platform objectives

The goal of the AI Matrix platform is to build an open ecosystem that drives the advances and development of AI technology through unified performance evaluation standards and test methods. The platform not only provides benchmarks of various AI hardware platforms and software framework, but also provides users with data visualization, community interaction and other functions to help users better understand the performance of various AI hardware platforms and software frameworks, and choose the most suitable solutions for themselves.

2.3 AI Matrix Platform Vision

AI Matrix The platform hopes to build an open ecosystem that gathers outstanding AI practitioners, research institutions and industry partners from around the world to jointly promote the development and application of AI technology. The platform is committed to creating a fair, transparent and credible testing environment, providing accurate performance evaluation and comparison of AI hardware platforms and software framework around the world, and providing strong support for the development of AI technology and industry.

3. AI Matrix platform technical architecture

3.1 Distributed customer-level hardware architecture

AI Matrix The distributed customer-level hardware architecture consists of multiple nodes, each with independent computing and storage capabilities. Nodes are connected through high-speed network to realize fast data transmission and sharing. The architecture adopts distributed storage technology to store data scattered on multiple nodes to ensure the security and reliability of data.

3.1.1 Hardware equipment

AI Matrix The hardware devices of the distributed customer-level hardware architecture mainly include high-performance computing servers, storage devices, network devices, etc. These devices adopt high performance and low power consumption design to ensure the stability and efficiency of the system. At the same time, the devices are connected through the high-speed network to realize the rapid transmission and sharing of data.

3.1.2 Software system

AI Matrix The software system of distributed customer-level hardware architecture mainly includes operating system, distributed storage system, computing framework, etc. The operating system is responsible for managing hardware resources and providing a stable and efficient operating environment; the distributed storage system is responsible for storing and managing data to ensure the security and reliability of data; the computing framework provides efficient computing power and support the operation of various AI algorithms and models.

3.1.3 Communication protocol

AI Matrix The Distributed customer-level hardware architecture adopts low-latency and high-bandwidth communication protocol to ensure fast and stable data transmission between nodes. The protocol also supports encryption and secure transmission to ensure the security and privacy of the data.

3.1.4 Scalability

AI Matrix The Distributed customer-level hardware architecture has good scalability, which can increase or decrease the number of nodes and upgrade the hardware equipment according to customer requirements. The architecture adopts a modular design to facilitate the expansion and upgrade of the system. At the same time, the architecture also supports horizontal and vertical expansion to meet different scale and performance requirements.

3.2 Blockchain technology and smart contracts

3.2.1 AI Matrix Blockchain technology

The AI Matrix platform uses blockchain technology as its underlying technical architecture. Blockchain technology is a decentralized distributed ledger technology, which enables the distributed storage and processing of data by removing the central nodes. This technology provides data secure, reliable and transparent technical support for the AI Matrix platform.

Data storage: Taking advantage of the decentralized nature of the blockchain, the AI Matrix platform stores the data scattered on multiple nodes to ensure the security and reliability of the data. At the same time, the consensus mechanism of blockchain can ensure the consistency and immutability of data.

Smart contract: Smart contract is an important part of blockchain technology. It is a protocol that performs automatically and automatically. In the AI Matrix platform, smart contracts are used to define and execute a variety of transactions, interactions, and business logic. Through smart contracts, the AI Matrix platform can enable automated and efficient data processing and analysis.

Consensus mechanism: The AI Matrix platform adopts multiple consensus mechanisms, such as POS and POW, to ensure the reliability and security of the data. These consensus mechanisms can ensure data consistency between nodes and avoid data conflicts and tampering.

3.2.2 AI Matrix Smart Contract

Smart contract is one of the core components of the AI Matrix platform. It is an automated and automated execution protocol. In the AI Matrix platform, smart contracts are used to define and execute a variety of transactions, interactions, and business logic. Through smart contracts, the AI Matrix platform can enable automated and efficient data processing and analysis.

Automated execution: Once smart contracts are deployed on the blockchain, they execute automatically. This enables the AI Matrix platform to enable automated and efficient data processing and analysis.

Data security: Smart contracts use encryption technology from blockchain technology to ensure data security and privacy. At the same time, smart contracts are immutable and cannot be modified or revoked once deployed on the blockchain.

Flexibility and scalability: The smart contract of the AI Matrix platform is modular to facilitate the expansion and upgrade of the system. At the same time, smart contracts also support a variety of programming languages and frameworks, convenient for users to customize and develop.

Cross-chain interaction: The smart contract of the AI Matrix platform supports cross-chain interaction, which can realize data interaction and transaction between different blockchains. This enables the AI Matrix platform to interact and cooperate with multiple blockchain networks.

3.3 Fog calculation technology

Fog computing is a new type of computing method. By processing and storing data at the network edge layer, it improves the efficiency of data analysis and processing, reduces the delay, reduces the network transmission pressure, and improves the security. In the field of AI, fog computing technology has been widely used in various application scenarios, such as smart home, autonomous driving, industrial automation and so on. AI Matrix The platform adopts fog computing technology to provide users with efficient, stable and scalable AI computing services.

3.3.1 Technical Principle

Fog computing technology makes use of the computing resources of the network edge devices, and some data that does not need to be put on the cloud is directly processed and stored in the network edge layer. This way avoids the frequent transmission of data between the cloud and the terminals, reduces the network transmission pressure, and improves the efficiency of data processing. At the same time, because the data is processed locally, it also improves the security and privacy of the data.

Data processing: the computing resources of the network edge devices are used to conduct data preprocessing, feature extraction, model training and other operations. This way can reduce the amount of data transmission and computing resource consumption, and improve the efficiency of data processing.

Real-time analysis: fog computing technology can realize real-time data analysis, quickly process and analyze real-time data, and provide support for real-time decision making.

Edge device interconnection: Fog computing technology can realize direct communication between edge devices in the network, reduce information transmission distance, and improve data transmission efficiency.

3.3.2 Technical advantages

Low latency: the position of the computing node of fog computing is closer to the network topology to the end user, and the computing resources close to the service requirements are used for data processing, so the timeliness is higher.

Accurate position perception: fog computing mainly uses devices in the edge network. Due to the wide edge distribution range of the network, the large number of nodes and the high density, the position information of devices can be accurately located through mobile terminals, and the position perception is more sensitive, fast and accurate.

Geographic distribution: Fog computing has a vast geographic distribution, with a large number of network nodes distributed at the edge of the network in devices, which is in sharp contrast to cloud computing. If a server in an area is abnormal, the user can quickly move to the adjacent area.

High mobility: fog computing supports high mobility, so that the edge of the network can directly communicate between devices, and the communication signal does not have to be uploaded to the cloud or around the base station, reducing the information transmission distance.

High security: Because data is processed and stored locally, fog computing technology can improve data security and privacy. At the same time, it reduces the data transmission between the cloud and terminals, and also reduces the risk of data theft or leakage.

3.3.3 Application Scenario

Smart home: Through fog computing technology, smart home devices can process data and analyze data locally to improve the response speed and user experience. At the same time, because the data is processed and stored locally, it also improves the data security and privacy.

Autonomous driving: In autonomous driving systems, fog computing technology can be used for real-time data processing and analysis to improve the vehicle's perception and decision-making ability. At the same time, the data is processed and stored locally, which also reduces the risk of the data being stolen or leaked.

Industrial automation: In the field of industrial automation, fog computing technology can be used for real-time data processing and analysis to improve production efficiency and product quality. At the same time, the data is processed and stored locally, which also reduces the risk of the data being stolen or leaked.

Other application scenarios: In addition to the above application scenarios, fog computing technology can also be applied to medical care, fintech, smart city and other fields.

3.4 Decentralized design concept

Distributed architecture: The core of the concept of decentralized design is the distributed architecture. In the AI Matrix platform, data and computational resources are dispersed across multiple nodes, each with independent computational and storage capabilities. This architecture can avoid a single point of failure and improve the reliability and stability of the system.

Autonomy and self-organization: The decentralized design concept emphasizes the autonomy and self-organization ability of the system. In the AI Matrix platform, nodes interact and collaborate through smart contracts to realize data sharing and value transmission. This mechanism can reduce the dependence on the central node and improve the autonomy and flexibility of the system.

Openness and transparency: The decentralized design concept emphasizes the openness and transparency of the system. In the AI Matrix platform, users can freely participate in the process of data sharing, model training and optimization to realize the control and supervision of data and computing resources. At the same time, the platform also provides transparent data and the usage of computing resources, so that users can know more about the usage of their own data and computing resources.

Privacy protection: The decentralized design concept focuses on privacy protection. In the AI Matrix platform, users' data and computing resources are stored and processed separately, avoiding the risk of data being stored and processed centrally. At the same time, the platform also uses encryption technology and other means to protect the security and privacy of users' data and computing resources.

4. Application scenarios and advantages of the AI Matrix platform

4.1 AI Matrix platform application scenarios

Smart home: AI Matrix platform can be applied in the field of smart home. Through intelligent sensors, voice recognition and other technologies, the automatic control and intelligent management of home devices are realized. For example, users can control the switch and adjustment of lighting, air conditioning and other equipment through voice commands to improve the convenience and comfort of home life.

Autonomous driving: The AI Matrix platform can be applied to the field of autonomous driving to realize autonomous navigation and intelligent driving through deep learning, computer vision and other technologies. For example, by identifying environmental information such as road signs and obstacles, autonomous vehicles can independently plan their driving path to ensure the safety and efficiency of driving.

Medical diagnosis: AI Matrix platform can be applied in the field of medical diagnosis. Through medical image analysis, pathological analysis and other technologies, it can assist doctors in disease diagnosis and treatment plan formulation. For example, by analyzing medical imaging data, AI can assist doctors in determining the severity of the disease and the location of the lesion, and improve the accuracy and efficiency of diagnosis.

Financial investment: AI Matrix platform can be applied in the field of financial investment. Through big data analysis, machine learning and other technologies, investors are assisted to make investment decisions on stocks, futures and other financial products. For example, by analyzing historical data and market trends, AI can provide investment advice and risk assessment to help investors make more informed investment decisions.

Other application scenarios: The AI Matrix platform can also be applied to other fields, such as smart manufacturing, smart city, etc. In the future, with the continuous development of technology and the continuous expansion of application scenarios, the AI Matrix platform will be applied and developed in more fields.

4.2 AI Matrix platform advantages

Improve data processing efficiency and reduce latency: AI Matrix The platform adopts distributed architecture and efficient data processing technology, which can quickly process and analyze large amounts of data and improve data processing efficiency. At the same time, because the data is processed and stored locally, the data transmission amount and computing resource consumption are reduced, and the network transmission pressure and delay are reduced.

Protecting the security and privacy of user data: The AI Matrix platform adopts encryption technology and security mechanisms to ensure the security and privacy of user data. At the same time, the platform also provides transparent data usage, so that users can better understand their own data usage, and enhance their sense of trust and security on the platform.

Providing cost-effective solutions: The AI Matrix platform uses open source technology and a scalable architecture to reduce development and maintenance costs. At the same time, the platform also provides flexible scalability and customisability to meet the needs of different users and provide users with economical and efficient solutions.

Promote the innovation and development of AI technology: The AI Matrix platform adopts advanced AI technology and algorithms, which can realize a variety of complex tasks and functions. At the same time, the platform also encourages users to participate in community discussion and communication, promote knowledge sharing and innovation, and promote the innovation and development of AI technology.

Contribute to the development of digital economy: AI Matrix Platform, as an advanced digital technology platform, can contribute to the development of digital economy. By providing efficient, safe and reliable AI services, the platform can help enterprises to improve production efficiency, reduce costs, enhance competitiveness, and promote the development of the digital economy.

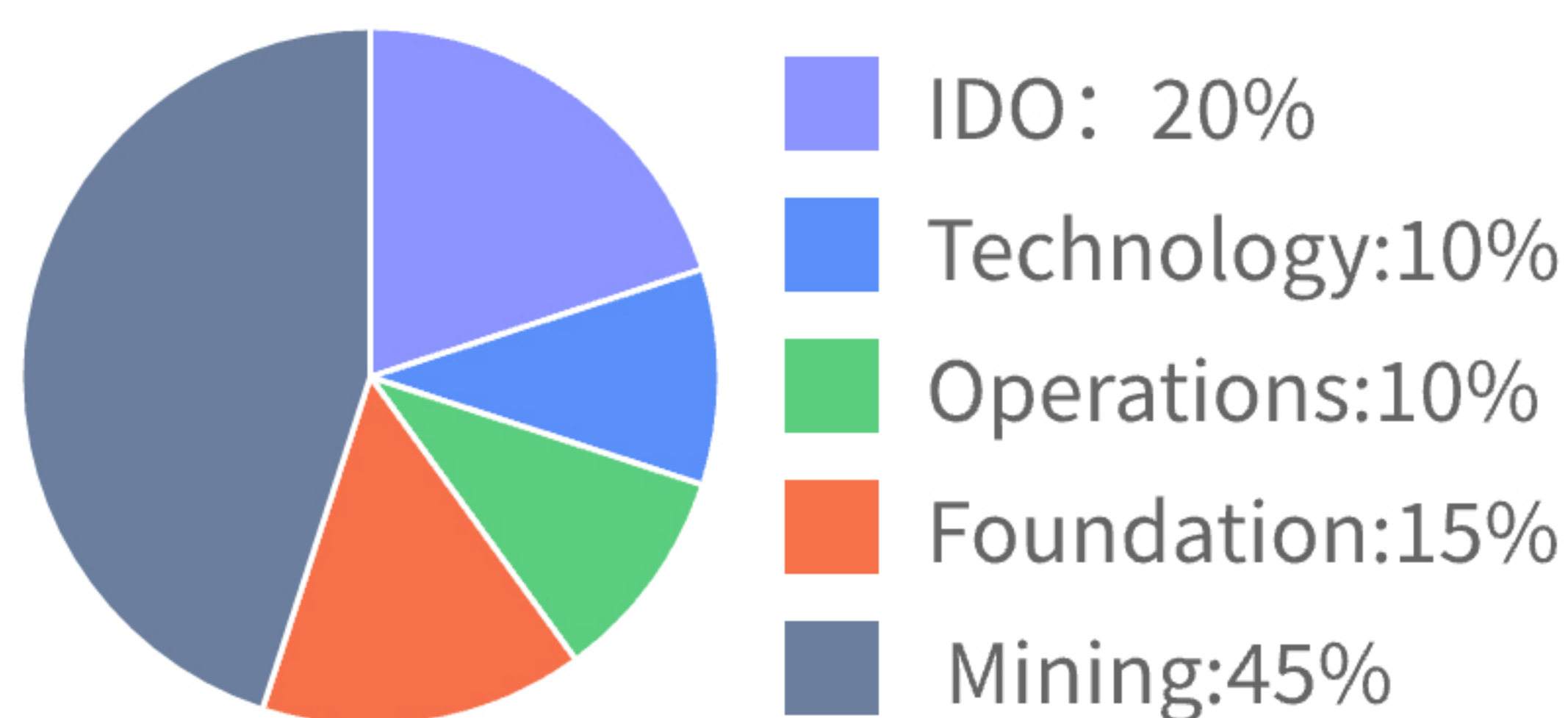
AI Matrix The platform has the advantages and values of improving data processing efficiency, protecting users' data security and privacy, providing cost-efficient solutions, promoting the innovation and development of AI technology, and contributing to the development of the digit

5. Token economic model

5.1 Token distribution mode

Token name: **AIMX**

Total tokens: **150 million**



5.2 token economic value

AI Matrix (AIMX) is a decentralized economic model based on blockchain technology, aiming to promote the innovation and development of AI technology through the issuance and circulation of tokens.

Incentive participants: By issuing tokens, participants can be encouraged to contribute to the AI Matrix platform, such as data provision, model optimization, community building, etc. Participants can receive a token reward for contribution, thus a financial return.

Promoting trading: tokens can be used as a vehicle for the purchase and use of services and resources on the AI Matrix platform. The circulation of tokens can promote the vitality and liquidity of the market, and improve the utilization efficiency and value of resources.

Promoting ecological development: The token economy model can attract more developers, data scientists, enterprises and other companies to participate in the construction and development of AI Matrix ecology. Through the incentive and circulation of tokens, ecological prosperity and growth.

In AI Matrix's token economic model, the issuance and circulation of tokens are supported by blockchain technology. Blockchain technology ensures the transparency and security of tokens and prevents fraud and cheating. At the same time, blockchain technology can also provide decentralized support for the issuance and circulation of tokens, reducing the reliance on centralized institutions.

AI Matrix The token economic model is a decentralized economic model based on blockchain technology, aiming to promote the innovation and development of AI technology through the issuance and circulation of tokens. The model can motivate participants, promote transactions and promote ecological development, and provide new impetus and support for the development and application of AI technology.

6. Team introduction

AI Matrix The team is a global team led by the world's top artificial intelligence, communication and chip scientists, and its research and development strength has significant advantages in the field of AI. The team has deeply combined artificial intelligence with blockchain technology to create a new generation of blockchain technology, providing new impetus and support for the development and application of AI technology.

Mike Brusov: He is the CEO of AI Matrix and an expert with many years of experience in AI research and development. He not only has a deep understanding of AI technology, but also has excellent leadership and innovative spirit. He has a clear plan for AI Matrix's development direction and future vision, and leads the team to move forward.

Bill Sciortino: He is the COO of AI Matrix, and has rich experience in enterprise management, and has held senior executive positions in many well-known enterprises. He has a keen market insight and excellent business thinking, and can accurately grasp the market trends and user needs, and develop the appropriate strategic planning and operation strategy for the company.

Daniel McKee: Is a CTO of AI Matrix, with a PhD in computer science, and has conducted in-depth research in the field of artificial intelligence and blockchain technology. He served as a senior technical director in a well-known technology company, responsible for leading the company's technology development team and promoting the successful implementation of a number of important projects. With his excellent technical ability and innovative spirit, he has provided strong support for AI Matrix's technology development and pushed the company to move forward.

7. Project development route

Short-term target (1-3 months):

- * Complete the optimization and improvement of existing projects to improve product quality and user experience.
- * Establish a sound technology research and development team, strengthen the training and skills of technical personnel.
- * Explore new business models and market opportunities to inject new impetus into the company's development.

Interim target (3-12 months):

- * Promote the application of AI technology in core business areas to improve business efficiency and competitiveness.
- * Carry out technical cooperation and exchanges with partners, and jointly promote the development and application of AI technology.
- * Explore new application scenarios and market opportunities to support the company's business expansion.

Long-term goals (1-3 years):

- * Build a complete AI technology ecosystem to attract more partners and developers to join us.
- * Promote the innovation and development of AI technology, and provide users with more efficient, convenient and safe AI services.
- * Expand the international market and improve the company's visibility and influence in the world.

The project development route of AI Matrix aims to promote the development and application of artificial intelligence technology, and to provide users with more efficient, convenient and safe AI services. The company will always pay attention to the market demand and technology trends, constantly adjust and optimize the project roadmap, to inject new impetus into the development of the company.

8. Disclaimer

Nothing in this white paper constitutes legal, financial, commercial or tax advice, and you should consult your own legal, financial, business or other professional advisor before participating in any activity related to this. The staff of the platform, members of the project R & D team, third-party R & D and development organizations and service providers shall not be liable for any direct or indirect damage and losses that may be caused by the use of this white paper.

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AI Matrix The team will continue to make reasonable attempts to ensure that the information in this white paper is true and accurate. During the development process, the platform may be updated, including but not limited to the platform mechanism, platform progress, and distribution situation. Parts of the document may be adjusted in the new white paper as the project progressed. Participants are requested to adjust their decisions according to the updates. The Smart Chain Vision team makes it clear that it is not liable for the loss caused by the participants' reliance on the content of this document, the inaccuracies of the information in this article, or any actions resulting from this article. The team will spare no effort to achieve the goals mentioned in the document, but based on the presence of force majeure, the team cannot fully commit itself.