



GEAI

# Genesis AI

white paper

# [GEAI] Anúncio oficial da emissão global de tokens criptográficos via

A 31 de março de 2026, a LKY Global Exchange lançará em exclusivo a IEO global do token **[GEAI]**, marcando o início de uma nova era impulsionada pela inteligência artificial.

## Detalhes da IEO

**Período de Subscrição:** 31 de março de 2026 a 6 de abril de 2026

**Data de Listagem:** 7 de abril de 2026 [Abertura do par de negociação GEAI/USDT]

**Preço de Subscrição:** 0,62 USD por GEAI

**Preço de Emissão:** 1,82 USD por GEAI

**Emissão Total:** 273.200.000 GEAI

**Quantidade Mínima de Subscrição:** 10.000 GEAI

**Quantidade Máxima de Subscrição:** 200.000 GEAI

## Como participar:

- 1.º Aceda à secção "Novos Tokens", selecione o projeto pretendido e clique em "Subscrever".
2. O sistema realizará um sorteio automaticamente e notificará os participantes sobre os resultados por mensagem.
3. Se for selecionado(a), prepare os fundos necessários para concluir a candidatura dentro do prazo estipulado.

Aproveitando o poder da inteligência artificial, a GEAI está a redefinir o futuro do setor financeiro. Junte-se a nós na construção de uma nova era de finanças inteligentes.

# [GEAI] Official Announcement of Global IEO Issuance of Crypto Tokens

On March 31, 2026, LKY Global Exchange will exclusively launch the global IEO of the [GEAI] token, marking the beginning of a new era driven by artificial intelligence.

## IEO Details

**Subscription Period:** March 31, 2026 to April 6 , 2026

**Listing Date:** April 7 , 2026 [GEAI/USDT Trading Pair Opens]

**Subscription Price:** USD 0.62 per GEAI

**Issuance Price:** USD 1.82 per GEAI

**Total Issuance:** 273,200,000 GEAI

**Minimum Subscription Quantity:** 10,000 GEAI

**Maximum Subscription Quantity:** 200,000 GEAI

## How to participate:

1. Go to the "New Tokens" section, select your desired project, and then click "Subscribe".
2. The system will automatically conduct a lottery and notify participants of the results via message.
3. If selected, please prepare the necessary funds to complete the subscription within the specified time.

**Leveraging the power of artificial intelligence, GEAI is redefining the future of the financial industry. Join us in building a new era of intelligent finance.**

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## Preface

Over the past decade, artificial intelligence (AI) has experienced rapid development, permeating every aspect of human life. Autonomous vehicles are poised to revolutionize transportation economics; AlphaGo has defeated the world's top chess players; IBM's Watson analyzes vast medical imaging datasets at unprecedented speed; Amazon leverages AI to optimize its massive logistics network. We are now witnessing an era of AI explosion. The critical question remains: How can humanity harness AI to ensure it serves us safely and efficiently?

Blockchain is a peer-to-peer, decentralized, and secure shared architecture that enables the sharing of data and resources previously impossible to be collectively utilized. The scope of data and resources accessible through blockchain will be broader and more extensive than that of the internet.

Artificial intelligence remains the most powerful data analysis technology to date. By integrating peer-to-peer blockchain technology with AI systems, massive datasets and resources on the blockchain can be effectively analyzed and utilized. The advancement of AI requires vast amounts of data, and every individual has already generated substantial digital footprints across the internet. In the future, blockchain-based data will grow exponentially. Enabling everyone to possess their own AI systems, allowing self-management and self-service capabilities, and forming a peer-to-peer AI network will empower humanity to develop effective methodologies and frameworks for AI governance. This approach will enable artificial intelligence to maximize productivity within optimized production ecosystems.



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# Chapter 1 Analysis of Project Birth Background

## 1.1 Concept of AI Artificial Intelligence

In recent years, the development of artificial intelligence (AI) has been characterized by rapid progress, swiftly integrating into economic, social, and daily life domains while sparking a global "prairie fire" across the world. International data firm IDC recently released its semi-annual "Global Artificial Intelligence Market" report, forecasting that the AI sector will experience exponential growth with the market maintaining double-digit expansion rates.

Furthermore, significant advancements will be made in language, speech, and visual technologies, as well as multimodal solutions, which will fundamentally transform "human efficiency." According to a report by Next Move Strategy Consulting, the artificial materials market is experiencing robust growth, with artificial intelligence demonstrating promising prospects and projected to expand twentyfold over the next decade.

Currently, the market value of artificial intelligence (AI) is nearly \$100 billion, and this figure is projected to grow, reaching approximately \$2 trillion by 2030. Artificial intelligence refers to the capability of computer systems or machines to perform the following tasks:

It typically requires human intelligence, such as visual recognition, speech recognition, natural language processing, and decision support systems. Artificial intelligence (AI) is one of the most innovative and influential technologies in the world today, transforming production methods and lifestyles across various industries, and bringing significant potential value and implications for economic and social development.

Over the past five years, global enterprises have witnessed a rapid surge in AI technology adoption, with the proportion of companies actively deploying AI solutions rising from 20% in 2017 to 50%. This transformation unequivocally demonstrates that artificial intelligence is emerging as the core engine driving industrial innovation and transformation. The development of AI in 2024 exhibits

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several notable trends, reflecting not only technological advancements but also pointing to new directions for industrial applications and strategic planning.

- **From Macro Models to General Artificial Intelligence:** OpenAI is developing next-generation AI, marking a pivotal shift from macro models to general artificial intelligence. General AI is characterized by its ability to self-modify code and adapt to complex learning tasks, operating independently of human-generated data. This transformation holds the potential to enable AI to surpass human capabilities across diverse domains.
- **Synthetic data breaks through training data bottlenecks:** Synthetic data refers to data generated using machine learning models, aimed at addressing the limited availability of high-quality data in artificial intelligence training. This trend indicates that synthetic data will become a crucial direction for AI development, helping to enhance AI performance while reducing dependence on human-generated data.
- **Applications of quantum computers in the field of artificial intelligence:** Given the computational demands of AI technologies, quantum computers may emerge as a pivotal solution for AI development. The parallel computing capabilities of quantum computers confer potential advantages in processing AI algorithms. This indicates that the integration of quantum computing with AI technologies holds promise for unlocking novel possibilities.
- **Comprehensive Application of Artificial Intelligence and More General-Purpose AI:** AI technologies are transitioning from single application domains to diversified use cases, expanding from general scenarios to industry-specific applications. With breakthroughs in large-scale AI models and the rise of generative AI, the ability to handle complex problems has significantly improved, providing advanced tools and solutions across various industries. Experts predict that AI will continue evolving toward greater versatility and efficiency in the future.

As a strategic technology leading the future, artificial intelligence is currently regarded by major economies worldwide as a crucial strategy to enhance their own

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capabilities, boost national competitiveness, and safeguard national security. Since 2013, more than 20 countries/regions, including the United States, China, the European Union, the United Kingdom, Japan, Germany, France, South Korea, India, Denmark, Finland, New Zealand, Russia, Canada, Singapore, the United Arab Emirates, Italy, Sweden, the Netherlands, Vietnam, and Spain, have released strategies, plans, or major initiatives related to artificial intelligence. An increasing number of countries are joining the ranks of AI deployment, supporting its implementation domestically through policies, funding, technical talent cultivation, and application infrastructure development.

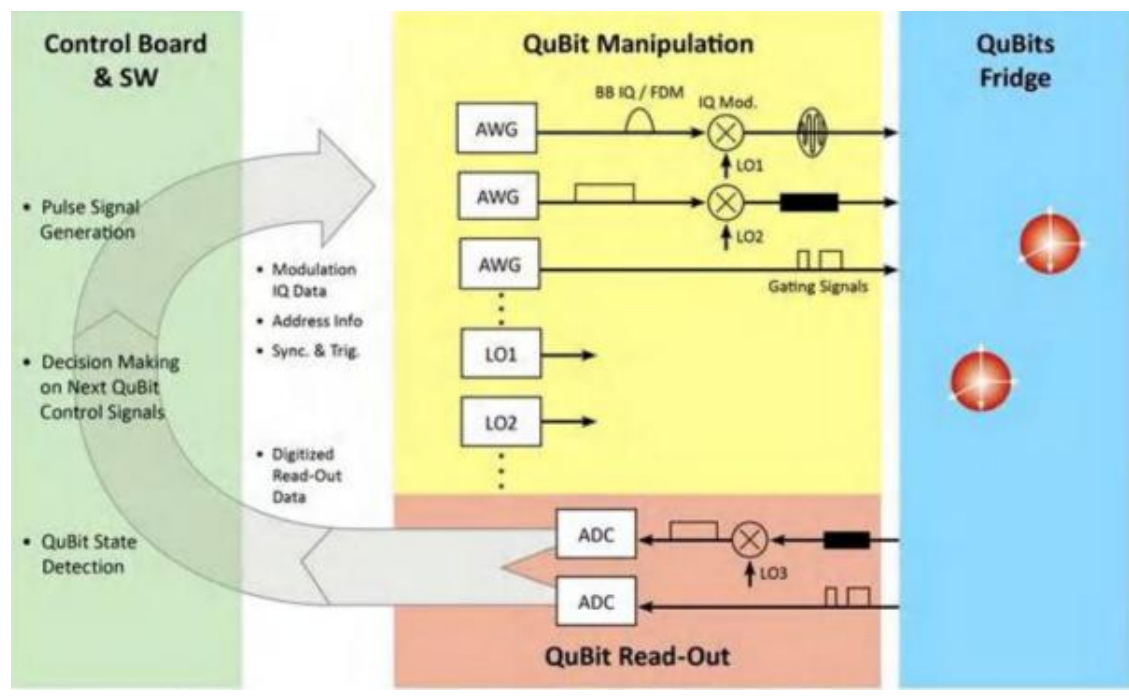
The advancement and application of artificial intelligence technology have become one of the defining trends in contemporary society. Its unique advantages and extensive application prospects have garnered significant attention, creating substantial business opportunities across various sectors. With continuous iterations and upgrades in big data technologies, coupled with increasingly sophisticated AI algorithms, it is reasonable to anticipate that artificial intelligence will play a more pivotal role in the following areas in the near future: driving market innovation, generating greater value for enterprises, and propelling market development into an era of intelligent transformation.

## **1.2 Quantum computing**

Rapid solutions enable efficient processing of complex large-scale data with high security and reliability. The transmission of sensitive information, encryption algorithms that are difficult to crack, and other functionalities provide a new computing capability and security assurance for the digital economy and intelligent society, offering disruptive technological advantages in terms of security and competitiveness.

With advancements in science and technology, significant progress has been made in computer science. Traditional computers have seen performance improvements, yet

increasingly struggle to meet growing demands in computational fields. Quantum computers are emerging as a focal point of research and attracting widespread attention, poised to revolutionize the industry. This breakthrough marks a pivotal turning point in computing, enabling faster and more efficient computational methods that can tackle complex problems and drive technological innovation.



The fundamental concept of quantum computers lies in utilizing principles of quantum mechanics for computation, rather than the binary system employed by conventional computers. Quantum computers can execute multiple computational tasks simultaneously, enabling them to solve complex problems more efficiently than traditional computers. Moreover, due to their distinct computational approach compared to classical computers, quantum systems demonstrate superior performance in specific scenarios such as large-scale data processing and intricate mathematical operations.

In addition to advantages in speed and efficiency, quantum computers also possess data confidentiality capabilities. Traditional computer algorithms cannot decipher the computational results of quantum computers, which means they can provide higher levels of data security and privacy protection. This enables quantum computers to

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have broad application prospects in fields such as finance, healthcare, telecommunications, and military sectors.

Quantum computing has extensive applications in the internet domain, with the following being some typical examples:

- **Big data processing:** Quantum computing enables rapid processing of large-scale data, with big data expected to provide more efficient solutions in the field of big data, including data analysis, accelerated data mining, and pattern recognition.
- **Cryptography and Security:** While quantum computing holds promise, it not only excels in cracking traditional cryptography but also enables the development of more robust encryption algorithms to enhance information security.
- **Optimization problems:** Quantum computing inherently excels in solving optimization problems (e.g., logistics, resource allocation), thereby enhancing the efficiency of operations research.
- **Artificial Intelligence:** Quantum computing is expected to accelerate AI development by training algorithms such as machine learning and deep learning, while enhancing the performance of AI models.
- **Quantum Communication:** Integrating quantum computing with quantum communication technology can enable safer and more efficient communication.

Privacy-protective communication methods have revolutionized internet communication.

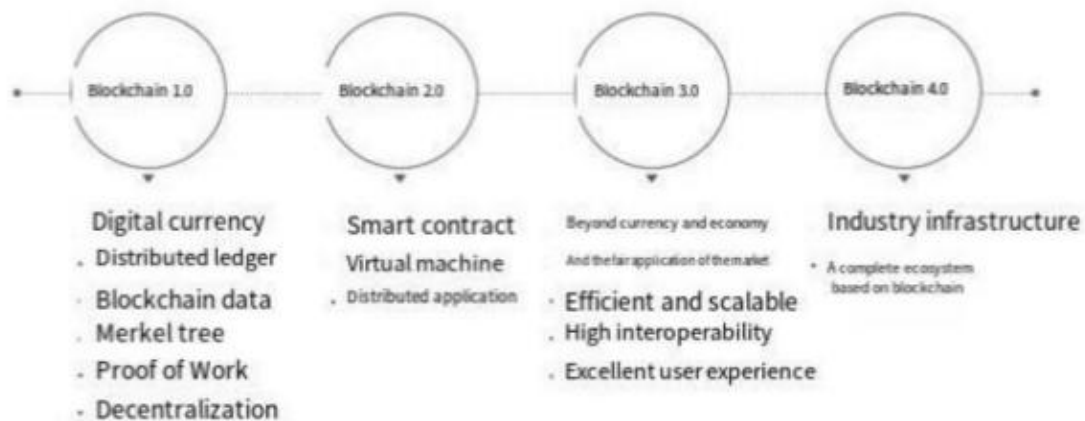
Quantum computing holds the potential to accelerate data processing speeds, enhance operational efficiency, strengthen information security, refine artificial intelligence algorithms, and advance scientific research, ultimately making our digital world smarter, more efficient, safer, and better. Moreover, the integration of quantum computing with creative design in architecture is ushering in a new era of

technological innovation. This synergy not only brings convenience to daily life but also sparks groundbreaking innovations in uncharted territories.

### 1.3 Blockchain Technology

Blockchain technology originated from the foundational paper "Bitcoin: A Peer-to-Peer Electronic Cash System," published in 2008 by an academic using the pseudonym Satoshi Nakamoto. In a narrow sense, blockchain is a chain-like data structure that links data blocks sequentially, using cryptographic methods to ensure its immutability and unforgeability. In a broader sense, blockchain technology is a new type of distributed infrastructure and computing paradigm. It utilizes the blockchain data structure to verify and store data, uses distributed node consensus algorithms to generate and update data, uses cryptography to ensure the security of data transmission and access, and utilizes smart contracts composed of automated script code for programming and operation.

Currently, blockchain technology is hailed by many large institutions as a major breakthrough technology that has fundamentally changed the way businesses and organizations operate. The technological foundation of blockchain is a distributed network architecture. It is precisely because of the maturity of distributed network technology that decentralized, weakly centralized, sub-centralized, and shared organizational and business structures can be effectively constructed.



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As people's understanding of the application scope and usability of blockchain technology continues to improve, enthusiasm for research, development, and implementation of blockchain's underlying core technologies, on-chain applications, and scenarios is soaring. Currently, significant effort is being invested in blockchain technology research and application, with teams engaged in underlying technology research accounting for approximately 20%, while teams focusing on application scenarios and vertical industry chains account for about 80%. Compared to the application layer, the underlying protocol can create token market value and also breaks the traditional internet's data-centric model. In a blockchain system, application layer projects themselves become full-service providers, no longer possessing user traffic and data value; the value of this personal data is distributed among users, making the underlying protocol more valuable than the application layer.

The establishment of value interaction is the foundation of mutual trust. Chain technology implements a revolutionary trust mechanism. In technological innovation design, it can enhance the trust value in interactions between people and between people and technology, and even reduce business activity costs through the automation of certain processes. In terms of empowering artificial intelligence, blockchain demonstrates significant advantages. Blockchain can promote AI data sharing: data is the core driving force of AI development; data sharing means having richer data and more efficient data flow, thereby creating greater value. Only when data providers truly own the data can data ownership be protected, participation incentivized, and the reliability and authenticity of the data ensured, making data exchange more convenient and efficient. Blockchain's inherent storage characteristics, immutability, and economic incentive mechanisms provide an excellent solution for this.

- Blockchain and Identity Security: Blockchain technology will enhance AI security mechanisms by enabling AI to manage contracts with enhanced user-friendliness. For instance, device users can register on the blockchain platform and access different

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user tiers through smart contracts, allowing personalized features tailored to specific user levels. The registration system ensures hierarchical access control for devices, effectively preventing misuse while protecting users from potential harm. Blockchain also facilitates co-ownership and shared usage rights of devices, allowing users to configure device statuses and make decisions based on smart contract logic.

**Blockchain and Artificial Intelligence Value Chains:** Blockchain inherently possesses open, equitable, and transparent characteristics, with transactions within the chain exhibiting heightened transparency. Consequently, markets built on blockchain technology will demonstrate greater transparency and fairness. Moreover, its inclusive nature enables the creation of expansive platforms that facilitate value equivalence exchanges. Artificial intelligence, data interoperability, and value realization find optimal implementation within blockchain ecosystems, as it eliminates information asymmetry and transaction barriers—similar to the current landscape of cryptocurrencies like Bitcoin. This undoubtedly accelerates the flow of AI capabilities and data resources, encouraging broader participation in AI development and data provision initiatives.

- **Computing Power Sharing and Mutual Assistance:** Current networks based on COINS or Ethernet undoubtedly possess vast machine learning computing power pools, particularly for deep learning algorithms that require substantial computational overhead. Deep learning and neural network algorithms inherently demand multi-node computational collaboration. Blockchain inherently serves as a distributed computing resource, where its decentralized architecture and incentive mechanisms enable superior management and sharing of computational resources. Computing resources can be utilized not only in data centers but also distributed across idle computing resources to form a massive computing resource pool for seamless transactions. With the advancement of 5G and IoT technologies, discrete computing resources such as edge computing and fog computing require more extensive and reliable management networks. Blockchain provides a shared, transparent, and tradable computing environment that facilitates resource organization. Therefore,

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utilizing blockchain to construct decentralized resource pools offers enhanced management credibility and value, enabling optimal utilization of diverse computing resources—whether cloud computing resources or discrete computing resources. Blockchain provides an secure and reliable development environment for artificial intelligence. Its smart contracts and transaction mechanisms effectively achieve privacy protection, data openness, and data integration while maintaining encrypted transaction records. The immutable nature of blockchain records also facilitates query operations, supervision, and verification processes for AI systems, thereby enhancing public trust in AI technologies. In the data-centric era where valuable insights can be extracted from vast datasets, blockchain technology not only ensures data security but also enables efficient information extraction. Consequently, blockchain plays a pivotal role in addressing information leakage challenges prevalent in AI applications.

## **1.4 Integration of Quantum Computing and Artificial Intelligence**

The integration of quantum computing and artificial intelligence not only drives technological innovation but also opens up new possibilities for humanity. The potential of quantum machine learning is being explored, while artificial intelligence technologies are accelerating the development of quantum computing. This convergence will lead humanity toward a more intelligent and efficient future.

### **1) The potential of quantum machine learning**

The integration of quantum computing and artificial intelligence, particularly in the field of machine learning, demonstrates tremendous potential. Quantum Machine Learning (QML) aims to leverage the powerful capabilities of quantum computing to accelerate traditional machine learning algorithms, and this convergence is expected to bring breakthroughs in multiple aspects.

**Quantum-enhanced algorithms:** Quantum computing can accomplish tasks that traditional computers cannot handle or require excessive time to complete. For

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instance, quantum computing algorithms such as quantum perceptrons and quantum support vector machines can significantly enhance the training speed and accuracy of machine learning models. These quantum-enhanced algorithms not only excel in processing big data but also optimize complex high-dimensional problems, including image classification and natural language processing.

**Big Data Processing:** With the exponential growth of data volumes, traditional computing resources often fail to meet the processing demands of massive machine learning datasets. The parallel processing capabilities of quantum computing can effectively address this challenge, enabling faster big data analysis and model training processes. Quantum computing will significantly accelerate dataset processing and filtering, thereby enhancing the efficiency and performance of artificial intelligence models.

**Complex modeling, training, and optimization:** Quantum computing demonstrates unique advantages in solving combinatorial optimization problems and high-dimensional search tasks, which frequently arise in machine learning.

Quantum computing and artificial intelligence models can more efficiently explore solutions. In large-scale spaces, they enable the identification of optimal model parameters and architectures, thereby enhancing the model's generalization capability and prediction accuracy.

## 2) Quantum Artificial Intelligence: Prototype of Future Intelligent Systems

The convergence of quantum computing and artificial intelligence is poised to deliver groundbreaking intelligent systems that surpass current AI limitations. These quantum-powered AI systems will exhibit enhanced learning capabilities, reasoning prowess, and the ability to tackle complex tasks beyond conventional AI's reach—including global optimization, multidimensional prediction, and high-dimensional data analysis.

- Next-generation intelligent systems: Quantum artificial intelligence may serve as their core component

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Next-generation intelligent systems support global solutions for challenges such as climate change modeling and precision medicine

Complex financial forecasting. With the aid of quantum computing, artificial intelligence will be capable of processing more sophisticated models and data, delivering enhanced predictive capabilities and providing accurate, real-time decision support.

- **Cross-domain Applications:** The potential of quantum artificial intelligence extends beyond science and technology, playing pivotal roles in societal, economic, and scientific research domains. In the future, quantum AI may emerge as a transformative technological engine driving innovation across industries, fundamentally reshaping how we process information, make decisions, and propel progress. The convergence of quantum computing and artificial intelligence heralds a new era. At this stage of technological advancement, there is growing anticipation for synergistic effects between these fields to usher in an intelligent new age. Future quantum AI will transcend current capabilities, representing a revolutionary technological paradigm that combines computational power with cognitive intelligence to lead humanity toward a more efficient and intelligent future.

### 3) A new engine for future-oriented technology

The integration of quantum computing and artificial intelligence is expected to emerge as a new engine for future technological development, driving profound transformations across various industries. This technological convergence will not only foster disruptive innovations but also play a pivotal role in the following aspects: Global technological competition will shape the future economic and social landscape. The integration of quantum computing and artificial intelligence is poised to become the core driving force of the next industrial revolution. Their convergence will not only bring technological breakthroughs but also profoundly influence the development models and competitive dynamics across various industries.

- **Cross-industry Impact:** Quantum AI technology will play a pivotal role across multiple sectors. In finance, for instance, quantum AI can optimize investment

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portfolios, predict market volatility, and detect fraudulent activities, thereby enhancing the stability and efficiency of financial systems. In healthcare, it enables rapid screening of potential drugs, personalized treatment plans, and accelerates new drug development processes. In manufacturing, quantum AI will streamline supply chain management, boost production efficiency, and drive advancements in smart manufacturing. The application potential of quantum AI spans nearly all industries, fundamentally transforming our work methods and quality of life.

- **Disruptive Innovation:** The integration of quantum computing and artificial intelligence will give rise to novel technologies and business models. For instance, powered by AI, quantum computing can accelerate the simulation and understanding of complex natural phenomena, facilitating the discovery of new materials, renewable energy sources, and innovative applications. These groundbreaking innovations will not only generate substantial commercial value but also drive social progress while addressing pressing challenges such as energy shortages, environmental protection, and health management.

The convergence of quantum computing and artificial intelligence will intensify global competition in the technology sector, prompting countries to increase investments in this field to secure a leading position in future technological advancements.

- **International competitive landscape:** Countries around the world, especially the United States, China, and the European Union, have recognized the importance of quantum artificial intelligence and introduced policies to increase support for research in quantum computing and artificial intelligence. For example, the U.S. National Quantum Initiative Act and China's New Generation Artificial Intelligence Development Plan both explicitly list quantum artificial intelligence as a key development area. Competition in this field among nations extends beyond technological R&D to include competition for talent, capital, and intellectual property rights. This race will determine global leadership in future scientific fields and technologies, and will have far-reaching impacts on international affairs.

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- **Reshaping the Tech Ecosystem:** With the advancement of quantum artificial intelligence, traditional tech ecosystems will undergo fundamental transformation. Tech giants, startups, and research institutions will all face significant changes. Organizations and governments will collaborate more closely to build an innovation-driven ecosystem. This ecosystem will accelerate the development and application of quantum AI technologies, enabling faster conversion into practical productivity. Meanwhile, openness and collaboration will become the defining themes of future scientific progress. Cross-border tech partnerships will drive global technological advancement and enhance societal well-being.

## 1.5 The Birth of GEAI

When artificial intelligence, quantum computing, and blockchain technology—three cutting-edge innovations—create powerful complementarity and form a vast technological ecosystem, they unlock exciting prospects for future scientific advancement. Meanwhile, technology opens up new frontiers and opportunities for capital markets.

The intelligent analysis capabilities of artificial intelligence and the decentralized nature of blockchain technology have created a secure and efficient digital infrastructure. Blockchain provides vast amounts of real-world data, offering highly reliable information that serves as a trustworthy source for training and inference processes in AI algorithms. Quantum computing delivers unprecedented computational power, further accelerating the advancement of AI algorithms and upgrading blockchain systems. Currently, humanity is entering the era of generalized artificial intelligence, marked by:

The inception of artificial intelligence (AI) technology lies in addressing multiple challenges within specific domains or across interdisciplinary fields. The interplay among AI, quantum computing, and blockchain enables the following outcomes:

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- Application of novel technologies, introduction of innovative business models, and creation of investment opportunities.
  - Cryptocurrency anchoring and blockchain technology are collaborating to provide counterfeiters with convenient hiding places.
  - Novel grid encryption technology designed to prevent hacker attacks.
  - Artificial intelligence robots have injected new vitality into the financial industry.

The new tool will eliminate AI bias.

- Quantum computing will become mainstream.

As 2025 approaches, the global economy faces unprecedented challenges and opportunities. In this turbulent era, rapid technological advancements, major policy shifts, and evolving market trends have collectively shaped a complex landscape. Yet the global economic landscape may remain dynamic. The synergy of artificial intelligence, blockchain, and quantum computing will drive a global technological revolution and industrial transformation, unleashing boundless commercial potential and innovation capabilities while igniting capital enthusiasm to spark a new wave of wealth revolution. Against this backdrop, we believe humanity is entering a transformative era. Today, artificial intelligence is experiencing explosive growth. We observe four critical dimensions in digital economy innovation and smart society development: first, core technologies like AI; second, AI integration with blockchain; third, emerging computing capabilities particularly quantum computing; and fourth, AI convergence with industries. Ultimately, transforming AI must begin with individual empowerment to propel global progress.

Life and various industries are undergoing transformations. Consequently, the GEAI ecosystem development fund established the GEAI project, aiming to explore a new blue ocean market and harness the wealth potential in the interdisciplinary fields of artificial intelligence, quantum computing, and blockchain.

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## Chapter 2 Overview of GEAI Project

### 2.1 Introduction to the GEAI Project

GEAI is a blockchain-based artificial intelligence application ecosystem and a token incentive model jointly developed with the GEAI Ecosystem Development Fund. It boasts world-class technical teams, a vibrant community, and substantial funding. Dedicated to pioneering innovative integrations, GEAI aims to build a self-evolving AI ecosystem that combines artificial intelligence, big data, and quantum computing technologies. By providing comprehensive support for AI applications across various fields, it leads the wave of AI revolution and delivers powerful momentum for building a future intelligent society.

**Vision:** Harnessing the formidable capabilities of quantum computing to propel artificial intelligence into a new phase of development, building smarter and more efficient decentralized ecosystems.

**Mission:** To provide quantum computing-based technical support for artificial intelligence in the blockchain industry, reduce technical barriers, and empower developers and users.

primary objective :

- Establish an AI model development platform and trading system supporting quantum computing.
- Build a decentralized ecosystem for data sharing and privacy protection.
- Grant governance rights and economic incentives to community members.
- Technologies for enhancing the efficiency and security of artificial intelligence models through quantum computing.
- Provides a quantum-optimized AI algorithm library to support machine learning, deep learning, and other tasks.
- Improve the training efficiency of artificial intelligence models and reduce

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computational costs through quantum computing via the following approaches.

GEAI revolutionarily integrates quantum computing with artificial intelligence, where AI is driving next-generation technologies. GEAI will construct subsequent phases through the following approaches:

- Establish trust-based artificial intelligence, quantum computing, and blockchain; develop ecosystem design algorithms based on decentralization and quantum logic, create innovative consensus mechanisms, and design ecosystem models;
- Penalty measures formulated in accordance with the rules are automatically enforced;
- Token incentives and ecosystem incentive models.
- Launch the development and trading platform for ecological artificial intelligence models, data sharing systems, quantum machine learning models, and computational capability application systems.

In the future, the perfect GEAI ecosystem will integrate top-tier applications such as decentralized AI systems, scientific research tools, and university education, alongside foundational support including data processing, computing power, algorithms, public blockchain infrastructure, and AI data centers. An innovative GEAI ecosystem incentive model can establish a complete circular value economic system. GEAI's artificial intelligence and quantum computing technologies—such as blockchain ledger values and transfer function maximization concepts — promote decentralized equality and extreme openness. By pioneering innovative integration of quantum computing and AI, it creates next-generation value internet miracles, ultimately driving the fifth major technological revolution worldwide.

## **2.2 GEAI Ecosystem Development Fund**

The GEAI Foundation, jointly established by institutions such as the Allen Institute for AI, Canadian Western Bank, and LKYGlobal Exchange, aims to collaboratively

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build platforms like Inflection AI and provide ecosystem support for community and ecosystem development. To better govern the community and empower consensus holders with proof-of-stake, the GEAI token is issued as the circulating currency. In the future, more ecosystem and circulation scenarios will be used to create value and generate investment returns for holders. The GEAI Foundation's purpose in managing assets/funds is not limited to the following:

- Support for AI projects that promote development
- Development and Maintenance of Supercomputing Supply Agreements
- Investment in cutting-edge artificial intelligence technologies and research on cognitive science
- Debin Ecological Physics Infrastructure Construction
- Provide initial funding for artificial intelligence developers
- AI+DePIN under R&D context
- Provide application support for artificial intelligence models
- Concepts of business development and public investment diversification, global adoption, and public investment
- Special rewards for super nodes

As a globally leading research and incubation institution for artificial intelligence technology, the GEAI Ecological Development Fund focuses on artificial intelligence (AI), general artificial intelligence (AGI), and AI-generated content (AIGC), continuously advancing its expertise in the field. Its core mission is to "achieve secure general artificial intelligence (AGI)," including the development of "general-purpose" robots and chatbots using natural language to benefit humanity. The GEAI Ecological Development Fund oversees three key research and development organizations: the Intelligent Industry Research Institute, the Artificial Intelligence Strategy Center, and the Quantum Computing Center.

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- **Institute of Intelligent Industries:** Leveraging artificial intelligence technology with massive data and supercomputing capabilities, it engages deeply in practical applications and cutting-edge research within the AI industry. Based on case study outcomes, it conducts research across various dimensions of multinational report studies, aiming to establish an influential AI industry think tank through an open, collaborative, and co-constructed model.

- **Artificial Intelligence Strategy Center:** The objective is to leverage AI to drive intelligent transformation. For enterprises, this initiative focuses not only on AI development and innovation but also on industry evolution, with particular emphasis on intelligent transformation and upgrading.

Traditional industries are leveraging artificial intelligence to establish an AI+Industrial Ecosystem Strategy Center as a platform, which houses industrial research laboratories and research institutions, along with reports, case studies, AI strategy training camps, Chief Intelligence Officer (CIO) training programs, and other initiatives.

- **Quantum Computing Laboratory:** Dedicated to researching quantum computing systems, quantum computing, quantum algorithms, and systematic simulations of fundamental quantum theories, as well as their applications in related fields and industries. Concurrently, it focuses on pioneering research and innovation in cutting-edge quantum hardware technologies, including automated and high-precision quantum measurement and control techniques, and large-scale quantum systems.

Practical quantum chip design and research, etc.

Currently, the GEAI Ecosystem Development Fund has established branches in Hong Kong, London, Silicon Valley, Riyadh, Abu Dhabi, Dubai, Kuala Lumpur, Seoul, and other locations. These offices serve as operational hubs for the organization.

Additionally, GEAI maintains operational units in Germany, Thailand, the Philippines, and other countries. This strategic expansion facilitates the global implementation of GEAI's business initiatives, with the project receiving robust support from its worldwide commercial network.

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## 2.3 Core Project Team

The core team of GEAI comprises experts and scholars from fields such as blockchain and artificial intelligence. With extensive technical expertise and innovative capabilities in areas like AI and quantum computing, they provide a solid foundation and assurance for GEAI's technical architecture and functionalities.

### **Michael Lee**

Massachusetts Institute of Technology (MIT). He has served as a senior researcher and held positions as Chief Technology Officer at renowned companies including Google, IBM, and Microsoft. He is a leading figure and authoritative expert in the fields of blockchain and artificial intelligence.

### **Elovin Watson**

A Doctor of Technology and former quantum engineer at Google, he leads an AI research laboratory with 15 years of software and hardware development experience, establishing the company as a world-leading developer and pioneer in quantum artificial intelligence. He has contributed to multiple groundbreaking quantum computing initiatives, including the Google Quantum Supremacy experiment and the TensorFlow Quantum framework for quantum neural networks. Additionally, he serves as an editorial board member and peer reviewer for numerous international and domestic scientific journals, including Nature Quantum Information and IEEE Quantum Information Letters.

### **Ivo Lovelac**

As Chair of the Department of Computer Science at the University of Oxford and former IBM blockchain expert, he serves as the director of the center with 20 years of research experience in blockchain and related fields. A globally recognized expert and entrepreneur in blockchain and quantum computing, he has earned numerous international and domestic technological awards and honors, including the Turing Award and Royal Gold Medal in blockchain technology, as well as recognition from the Computer Society. He also holds advisory roles in blockchain and quantum technology organizations such as the EU Group Chain Observatory and Blockchain

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Society (BBS), and the Quantum Technology Center.

**David Wang**

I hold a Ph.D. in Blockchain and Cryptography from Stanford University, with research interests spanning Ethereum, Polkadot, EOS, and related fields. As a core developer and technical advisor, I contributed to a renowned blockchain project that has become a hub for outstanding talents and innovators in the blockchain and cryptography domains.

**Jessica Tanaka**

She holds a master's degree from the University of Tokyo, Japan, specializing in Business Management and Marketing at SoftBank (T). She has served as a senior manager and Marketing Director at renowned companies such as NTT and Japan Telecom Newspaper, demonstrating professional expertise and strong leadership in business management.

**Rajesh Kumar**

Indian Institute of Technology (IIT)

An expert in financial engineering and risk management, he previously served as a senior analyst and Chief Financial Officer at renowned financial institutions including the State Bank of India and ICICI Bank. He is a leading authority and pioneer in the fields of financial engineering and risk management.

## **2.4 System Design Principles**

Blockchain technology holds revolutionary significance by establishing a groundbreaking trust model, while artificial intelligence revolutionizes value exchange between humans and machines. Through technological innovation, GEAI transforms trust dynamics between humans and technology during value interactions into genuine human-machine collaboration. By achieving partial automation in operational processes, it enables businesses to conduct operations at reduced costs.

### **1) Design principles at the economic level**

Cost reduction stands as a fundamental design principle of blockchain technology.

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Building on this foundation, GEAI enables participants to interact without requiring mutual basic information disclosure, achieving "trust without trust" and transforming the traditional third-party-centric trust model. This design paradigm features multiple innovations, with two aspects particularly noteworthy:

First, interactive trust is determined by machines and algorithms. Based on the GEAI quantum computing protocol, GEAI has developed an interactive system that relies on machine and algorithmic trust to address mutual trust issues in anonymous interactions. All participants authenticate identities through cryptography and achieve mutual trust via consensus mechanisms without establishing trust relationships.

Second, interaction processes can be automatically executed by programs. Through programmable smart contracts, GEAI automatically implements agreements reached between parties, eliminating human intervention factors and preventing any party from being rejected by the system.

Leveraging the decentralized nature of GEAI, the existing economic system can break free from current institutional constraints or rely on third-party intermediaries, enabling direct value delivery between parties. This decentralized architecture effectively reduces communication costs while enhancing operational efficiency.

## **2) Technical Design Principles**

In summary, GEAI's blockchain technology, smart contracts, quantum computing, and machine learning technology models can be regarded as a set of reliable distributed data storage and computing capability service systems with multi-party participation. Its unique features are as follows:

- Record participation behavior, meaning all parties can participate in the recording process;
- Joint maintenance involving multi-party participation and data storage, where all stakeholders participate in data storage and maintenance;
- Data and contracts are stored on the blockchain, allowing only read and write operations without modification.

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### 3) Application of the solution

Amid the convergence of artificial intelligence, quantum computing, and blockchain technologies, GEAI is committed to delivering comprehensive solutions to the market in the following key areas:

**Establishing a Global Quantum Computing Network:** GEAI creates a worldwide quantum computing network where integrated computing resources enable anyone to contribute to the network, while computational resources can also be accessed from networked computing.

- **Enhanced resource utilization:** GEAI's quantum computing network effectively utilizes idle computing resources, significantly improving resource utilization efficiency. Additionally, through intelligent scheduling, computing resources can dynamically allocate computational tasks based on demand, further enhancing resource utilization efficiency.
- **Decentralized service provision:** GEAI achieves decentralized service delivery based on blockchain technology. This not only reduces costs but also addresses data security and privacy protection issues. Furthermore, since quantum computing resources in the network are distributed, even partial resource failures will not affect the overall network operation.

In practical applications, the GEAI system will enable information sharing, consensus formation, and outcome integration among all participants, while providing AI-powered computational infrastructure support for developers and third-party projects. Through GEAI's decentralized quantum algorithm network, it facilitates more efficient allocation and utilization of computing resources, accelerates global digital transformation, supports massive data processing and intelligent application development, and delivers robust AI infrastructure to advance societal intelligence. This initiative aims to build a smarter, more reliable, and sustainable world.

## 2.5 GEAI Quantum Computing Protocol

The GEAI Quantum Computing Protocol is an innovative distributed computing

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framework that integrates quantum technology, machine learning, and blockchain technology. By leveraging globally idle computing resources, it enables efficient, scalable distributed computing with enhanced privacy protection and censorship resistance.

The GEAI Quantum Computing Protocol is designed to provide more intelligent services and innovative applications for human society, creating a better and more sustainable future. Its governance encompasses multiple aspects: AI-enabled markets, data security, AI models, tasks, research, transformation, and AI detection.

- **AI Governance:** A blockchain-based network governance technology that enables decentralization, autonomy, and consensus. It employs Governance Description Language (GDL) to define network rules, roles, and reward/punishment mechanisms, while leveraging consensus mechanisms and smart contracts to ensure security and reliability. This approach enhances network fairness and transparency, while incentivizing active participation from all stakeholders.
- **AI Computing Power Market:** A market technology that leverages blockchain technology and quantum economics to enable dynamic pricing and free trading of computing resources and computational tasks within networks. It employs Market Description Language (MDL) to define market rules, mechanisms, and efficiency metrics, while utilizing smart contracts and quantum game theory to execute market logic and operations. This market achieves fair pricing and free exchange of computing resources and computational tasks, effectively balancing network supply and demand.
- **AI Data Security:** A data privacy and secure transmission processing technology that leverages Differential Privacy (DP) and Homomorphic Encryption (HE) techniques. It utilizes Data Description Language (DDL) to define data attributes, formats, and sensitivity levels, while employing randomization and encryption algorithms to distort and encrypt data. This approach enables efficient data sharing and collaboration while safeguarding the interests of both data owners and users.

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- **AI Model:** A model processing technology that utilizes model compression (MC) and model encryption (ME) techniques to enable lightweight secure transmission of models. Model Description Language (MDL) is used to describe a model's structure, parameters, performance, and other information, with compression and encryption achieved through pruning, quantization, and encryption algorithms. The goal is to protect the intellectual property rights of model creators and users while ensuring efficient model storage and transmission.
  - **AI Task:** A task processing technology that utilizes task partitioning (TP) and task allocation (TA) techniques to achieve efficient task execution and optimal resource distribution. Task Description Language (TDL) is employed to specify task types, requirements, objectives, and other relevant information, while partitioning and matching algorithms are utilized for task segmentation and allocation.
  - **AI Learning:** A methodology that employs federated learning (FL) and meta-learning (ML) techniques to enable joint model training and investigate adaptive update processing strategies. Learning Description Language (LDL) is utilized to articulate learning strategies, parameters, evaluation metrics, and other critical information, while employing joint optimization and meta-optimization algorithms for model training and updates. This approach achieves continuous model improvement while adapting to diverse datasets and task variations.
  - **AI Transformation:** A transformative technology that leverages blockchain and quantum computing to standardize and regulate data and tasks within networks. The Transformation Description Language (TDL) defines the rules, processes, outcomes, and other relevant information for transformation, while smart contracts and quantum algorithms execute the underlying logic and operations. This approach enables efficient data conversion and optimized matching across networks, while adapting to diverse data types and operational scales.
  - **AI Detection:** A detection technology utilizing blockchain and quantum sensing technologies to achieve quality inspection and security protection for computing

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resources and tasks. DDL (Data Description Language) defines test specifications including standards, methodologies, results, smart contracts, and quantum error correction codes, while executing test logic and operations. The system enforces computational resource constraints within networks, enables real-time monitoring and immediate task remediation, and prevents malicious nodes from conducting simultaneous fraud and attacks. Supported by quantum computing, the GEAI protocol encompasses all aspects of GEAI, making blockchain-based cross-platform architectures, computational power sharing, and collaborative devices more accessible, while facilitating massive AI data processing and intelligent operations. Application development will also adopt a one-stop workflow approach.

## **2.6 GEAI Ecosystem Partners**

GEAI's ecosystem partners come from the fields of artificial intelligence and quantum computing, particularly in computational and blockchain technologies. Renowned enterprises and institutions have provided GEAI with technological expertise, funding, resources, and support. Intelligence and success are crucial for GEAI's development, while robust collaboration serves as both the key driver and catalyst for its advancement. Looking ahead, GEAI will deepen partnerships with more organizations and businesses to accelerate the progress of quantum artificial intelligence.

### **1) Google**

Google Inc., founded by Larry Page on September 4, 1998 and co-founded by Sergey Brin, is widely recognized as the world's largest search engine. The company operates across multiple sectors including internet search, cloud computing, and advertising, while developing and delivering a wide range of internet-based technological products and services. As a global tech giant, Google has demonstrated strong capabilities in natural language processing (NLP) and artificial intelligence-generated content (AIGC). GEAI will collaborate comprehensively with Google, integrating its core technologies in the fields of natural language processing and AIGC support.

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## **2) IBM (International Business Machines Corporation)**

International Business Machines Corporation (IBM), headquartered in Armonk, New York City, was founded in 1911 by Thomas John Watson in the United States. As the world's largest information technology company, IBM operates through its global commercial solutions division GEAI, which employs over 310,000 professionals across more than 160 countries and regions. GEAI will collaborate with IBM to deploy cloud-based services, achieving deep integration in computing, data analytics, and artificial intelligence capabilities.

## **3) Microsoft (MSFT)**

Microsoft is a multinational technology company headquartered in Redmond, Washington, USA, founded on April 4, 1975. It specializes in developing, manufacturing, licensing, and providing various computer software services. In November 2023, Microsoft announced the recruitment of OpenAI founders Sam Altman and Greg Brockman to lead a new artificial intelligence team. GEAI will collaborate closely with Microsoft in cloud computing, quantum computing, and machine learning fields.

## **4) OpenAI**

OpenAI is an AI research company headquartered in the United States. Its San Francisco-based subsidiary, OpenAI LP, is jointly owned by a for-profit entity and a non-profit parent company. The company's core mission is to develop safety technologies that benefit humanity. Specializing in General Artificial Intelligence (AGI), OpenAI has pioneered large-scale models to create groundbreaking innovations in AI, establishing itself as a leader in this field. As a top-tier AGI developer, OpenAI provides GEAI algorithm models and intelligent interaction solutions.

## **5) Ether Tooth (Ethereum)**

Ethereum is an open-source public blockchain platform featuring smart contracts and a decentralized Ethereum Virtual Machine (EVM) for processing operations. It facilitates peer-to-peer contract execution through its native cryptocurrency, Ether (ETH). While enabling digital asset transfers, Ethereum's capabilities extend far

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beyond this. The platform supports self-written code configurations and interoperability with other applications. Its inherent flexibility further enables the development of diverse complex applications.

GEAI will establish its own AI computing power trading ecosystem, leveraging Ethereum blockchain L2 support for scalability while integrating more cryptocurrencies to create market-enabled application scenarios.

#### **6) Polka dot pattern**

Polkadot is the next-generation blockchain protocol that integrates multiple private blockchains into a unified network, mirroring the resurgence of internet monopoly control. For individuals, Polkadot represents a grand vision rooted in previous revolutionary innovations, offering fundamental advantages through blockchain network commitments. Simultaneously, Polkadot will provide comprehensive support for GEAI's cross-chain capabilities, featuring collaboration, customization, and iterative upgrades.



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## Chapter 3 Core Technology Modules

The core of GEAI is the GEAI Quantum Computing Protocol, which integrates blockchain technology, smart contracts, quantum mechanics, and machine learning. This technology possesses cross-chain, cross-platform, and cross-device computing capabilities, as well as shared and collaborative functionalities. Consequently, the GEAI technical system embodies fundamental characteristics of blockchain technology, smart contracts, cross-chain capabilities, quantum mechanics, and machine learning.

### 3.1 Blockchain Technology: The Underlying Architecture

The blockchain system architecture of GEAI comprises four layers: infrastructure layer, multi-platform adaptation layer, core component layer, and interface control layer. Leveraging the integration of blockchain and artificial intelligence technologies, GEAI's blockchain technology features include:

- Support for digital certificates issued by authoritative CA authorities;
- Hardware-accelerated encryption/decryption;
- Supports national cryptographic algorithms SM1, SM2, SM3, and SM4;
- Containerized resource management with multi-chain support;
- DevOps operations monitoring;
- Data redundancy backup in the storage system ensures safety and reliability;

Standardization of data migration;

- Utilize incremental recovery technology to accelerate user data restoration;
- Redundant physical link design with multi-link high-reliability paths, eliminating single-link failure points.

#### 1) Multi-link support

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A logical blockchain is a private blockchain system that integrates specific functionalities, organizations, and designated nodes. Different organizations can establish distinct logical blockchains to achieve data isolation between chains. Smart contracts can be deployed on various logical blockchains.

In the GEAI blockchain system, users can establish multiple logical blockchains. The same blockchain system, known as a multi-chain architecture, consists of individual chains that form a logical structure comprising accounting nodes, consensus nodes, smart contracts, and ledgers. This design isolates participants from data (including smart contracts) while fulfilling diverse user requirements, implementing differentiated access permissions, and ensuring robust data security protocols.

In multi-chain architectures, hot chain segments can be divided into multiple components to construct parallel chains without increasing hardware costs. This enables parallel data writing and enhances parallel processing performance.

Multi-chain implementation achieves information isolation, fully meeting users' practical requirements. Different logical blockchain participants are established based on business scenarios, while simultaneously avoiding network congestion.

Communication occurs exclusively between nodes.

## **2) Contract Management**

As smart contract development constitutes the core functionality of blockchain technology, all blockchain business operations are centered around smart contracts and applied across diverse scenarios. These contracts enable capabilities including automated execution, secure isolation, business logic definition, and digital protocol implementation. Consequently, smart contracts serve as a critical component in blockchain application development processes and a key consideration for clients, requiring substantial effort in coding and debugging. To address this challenge, GEAI provides a comprehensive integrated development and debugging solution for smart contract environments. This approach significantly reduces user development cycles, alleviates development pressures, and enhances software development efficiency.

Unlike other platforms, GEAI not only performs lexical analysis but also conducts syntax checks on smart contracts while providing dedicated security safeguards.

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These verification services ensure compliance and security, preventing recurrence of security incidents similar to those seen in Ethereum DAOs. Below are block information details from the GEAI blockchain. Cloud Platform as a Service (PaaS) and Smart Contract Lifecycle Diagram:

### 3) Zero-knowledge proof

SG oldwasser, SM icali, and CR Mr Ackoff proposed zero-knowledge proofs in the early 1980s, which allow certification authorities to verify statements without disclosing any useful information, thereby convincing the verifier of their correctness.

Zero-knowledge proof systems serve as an effective protocol for achieving privacy-preserving security. First, we define an interactive proof system:

**Interactive Proof System:** A pair of interactive machines is denoted as  $\langle P, V \rangle$  (where  $P$  and  $V$  represent the Prover and Verifier respectively), and  $V$  constitutes an interactive proof system for language  $L$ .

When it meets the following conditions:

- Machine  $V$  is polynomial-time;
- **Completeness:** For every  $x \in L$ , there exists an honest prover  $P$  such that  $V$  interacts with  $P$  and outputs " $x \in L$ ".
- **Reliability:** For any verifier  $V$ , given that  $x \notin L$ , the probability of outputting ' $x \in L$ ' after interaction between  $V$  and  $P$  is extremely low.

It can be regarded as a zero-knowledge proof system that satisfies the following requirements: An interactive zero-knowledge proof system must meet the following four conditional attributes:

The verifier was unable to obtain any information from the protocol;

The certifier cannot deceive the verifier;

The verifier cannot deceive the prover;

The verifier cannot simultaneously impersonate a prover in another system.

Zerocash stands as a prime application case. As the first blockchain system employing zero-knowledge proof mechanisms, it enables full payment processing while

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leveraging Bitcoin's confidentiality framework. The system automatically obscures sender and recipient information, along with transaction amounts across the blockchain, while allowing selective disclosure of critical details to authorized parties via transaction query permissions. Through highly abstract zero-knowledge proof protocols, GEAI provides a decentralized security service layer for smart contract infrastructure that meets privacy protection requirements in data computation scenarios, including zero-knowledge identity verification and transaction data confidentiality.

#### **4) Homomorphic Encryption**

The concept of homomorphic encryption was first introduced by Ron Rivest, Leonard Adleman, and Michael L. Dertouzos in 1978. The first fully homomorphic encryption algorithm was developed by the same trio in 1977, but it wasn't until 2009 that Graig Gentry successfully proved the existence of such algorithms. Homomorphic encryption shares characteristics with homomorphic public key encryption systems, allowing ciphertexts to remain encrypted after processing. Specifically, ciphertext computations performed directly on the original text and those conducted on encrypted data yield equivalent results.

The assumption  $E(m)$  indicates that if the encryption algorithm  $m$ 's  $E(a)$  and  $E(b)$  are known, anyone can become a participant in the encryption algorithm. By performing certain operations on the cipher  $E(b)$ , the process is represented as:  $E(a) \otimes E(b)$

(where  $\otimes$  denote spatial binary operators for plaintext and ciphertext respectively). Its homomorphic properties are generally expressed as:  $E(a,b) = E(a) \otimes E(b)$ . Homomorphic encryption encompasses additive homomorphism, subtraction homomorphism, multiplication homomorphism, division homomorphism, etc., with additive homomorphism being a fundamental requirement. Multiplicative homomorphism implies all operations can be performed, termed algebraic homomorphism or complete homomorphism. Homomorphic encryption holds significant implications for the blockchain era.

Currently, from a security perspective, users are not reluctant to store sensitive

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information, as it is directly stored on the blockchain for computation. If sufficient practical applications are available, homomorphic encryption technology enables secure utilization of blockchain services without concerns about information leakage. Despite the existence of homomorphic encryption—particularly fully homomorphic encryption—this technology still requires substantial computational resources and remains far from the processing capabilities of mainframe computers. While scalable in scale, it faces limitations in data volume and more urgent business requirements. In various application scenarios, implementing homomorphic encryption at the smart contract level retains significant practical value. OVM's native architecture supports homomorphic encryption operators (GEAI), along with additive homomorphic filtering algorithms (Paillier, Benaloh), and multiplicative homomorphic encryption methods (RSA, ElGamal), facilitating rapid development of privacy-preserving decentralized applications.

In hardware encryption solutions, GEAI possesses mature hardware encryption capabilities and products. Its AI systems can integrate directly with GEAI to provide comprehensive data storage and transmission security for banks, insurance companies, securities firms, and other enterprises. This enhances encryption/decryption efficiency, signature verification performance, and key management security while helping clients comply with regulatory requirements and tiered protection standards. Currently, GEAI's hardware encryption supports most mainstream algorithms and internationally recognized cryptographic methods, including SM1, SM2, SM3, SM4, DES, AES, RSA, and others.

### **5) Secure Multi-party Computation**

Traditionally, to complete computational tasks, all participants' inputs are typically consolidated into a single node for centralized processing. While this conventional approach addresses certain challenges, it raises critical privacy concerns when participants lack sufficient trust mechanisms to fully access input data. Protecting individual participants' sensitive information becomes paramount in such scenarios. Real-world applications frequently demonstrate this vulnerability, as seen in cases

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where:

Alice suspects she may have a genetic disorder. She is aware that Bob maintains a database containing DNA samples of various diseases. Alice could naturally send her own DNA sequence sample to Bob for diagnostic testing to determine whether she is affected.

However, if Alice is concerned about her privacy and refuses to disclose her DNA information or diagnostic results, the aforementioned methods prove ineffective. After conducting market research, Company A decided to expand its market share in certain regions to achieve higher profits. Yet Company A fears that competitor Company B also plans to expand in these areas. In short, neither Company A nor Company B wants to compete in the same region, so they want to determine whether their expansion plans overlap. Simultaneously, neither party wishes to reveal the specific regions covered by their plans, as such disclosures could result in significant losses for both and allow competitor Company B to capture market share.

Before A or B, or after the real estate developer learns of the news, they may raise the price.

Both Party A and Party B are interested in a particular piece of land, so they need a method to address the issue of protecting user privacy while resolving such concerns. The commonality between the two examples mentioned above lies in their shared desire for participation from two or more stakeholders.

They entered into collaborations based on secret computations, yet none were willing to disclose their insights to any third parties. The core challenge lies in executing computational tasks while safeguarding participants' privacy data—a problem known as secure multi-party computation (SMC). Turing Award laureate Anqi Cao proposed a secure multi-party computation scheme.

In the 1980s, secure multi-party computation primarily aimed to achieve the following computational tasks: enabling two or more participants in a trusted distributed network to collaboratively compute an agreed-upon function and obtain results without disclosing users' private data. Secure multi-party communication with

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privacy-preserving computation has been widely applied in collaborative scientific computing, privacy-protected database queries, privacy-preserving data mining, privacy-protected computational geometry problems, and privacy-protected data processing domains.

Although O. Goldreich, S. Micali, and A. Wigderson proposed that secure problem cryptography can compute any secure multi-party computation function protocol, there remains controversy due to the extensive use of zero-knowledge proofs.

Participants need to transmit large amounts of data, which significantly limits its applicability. Therefore, secure multi-party computation protocols require improvement. The key lies in designing scenario-specific protocols, with GEAI classifying scenarios accordingly.

To ensure secure data computation, it is essential to abstract various secure parties at a high level, develop computational protocols, and provide underlying modular computing models that meet the collaborative computing requirements of chain-based solutions across diverse privacy-preserving data domains.

## **3.2 Quantum Computing: Enhancing Computational Power**

The GEAI quantum computing protocol plays a pivotal role in information and data processing by integrating core technologies of quantum mechanics and quantum computing. It is designed to enable the GEAI system to efficiently and intelligently process massive datasets and information.

### **1) Basic Principles**

The superposition principle of quantum mechanical states enables states to be superimposed on each other, allowing quantum information units to exist in multiple possible superposition states. This property endows quantum information processing with greater potential in the following aspects:

Compared to traditional information processing methods, quantum computing demonstrates significantly higher efficiency. While conventional computers can only store one binary state (00,01,10, or 11) per two-bit register at any given time, quantum

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computers utilize two-qubit qubit registers to simultaneously store all four possible states. As the number of qubits increases, quantum information can exist in superposition states with two possible configurations. This quantum parallelism aligns with the principle of evolution parallelism in quantum mechanics, enabling processing speeds that surpass those of classical computers.

- Quantum bit

Quantum bits form the theoretical foundation of quantum computing. In traditional computers, information units are represented by binary digits that exist solely in either "0" or "1" states. In binary quantum computers, these information units are called quantum bits. Beyond binary states, quantum bits can also exist in superposition states—linear combinations of arbitrary "0" and "1" states. These superposition states may manifest as pure "0" states, pure "1" states, or both simultaneously with defined probabilities. The "0" or "1" states are determined through measurement or interaction with other particles.

Objects. Any two states of a quantum system can be utilized to implement qubits, such as the ground state (ground state) and first excited state (first excited state) of electrons in a hydrogen atom, the + and 1/2 components of proton spin in any direction, and left-handed and right-handed circular motion polarized light.

A quantum system comprises multiple particles that move according to the following rules:

According to the laws of quantum mechanics, the system is considered to exist in a specific quantum state within the state space. The state space referred to here is a vector space. A quantum state composed of several eigenstates (fundamental quantum states) constitutes the basis quantum states, which are also known as basic states or basic vectors. The state space can be represented as a Hilbert space (a linear complex vector space), meaning that Hilbert space can describe all possible quantum states of a quantum system.

To facilitate notation and manipulation, Dirac proposed using the symbol  $|x\rangle$  to denote quantum states.  $|x\rangle$  is a column vector known as the right vector, whose

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conjugate transpose is denoted as  $\langle x|$ , which is a row vector called the bra. The superposition state of a qubit can be described using unit vectors in a two-dimensional Hilbert space (i.e., a two-dimensional complex vector space).

- principle of superposition

Imagine quantum particles as electrons in a magnetic field. These electrons may rotate, with those aligned with the magnetic field direction referred to as up-spin states and those opposing it as down-spin states. If we can apply external influences while maintaining energy conservation, energy pulses can induce spin state transitions. Using half-intensity pulses, we can prepare a lower-spin state where down-spin and up-spin states overlap (with each state having a 50% probability of coexistence). For  $n$  qubits, a system can maintain  $2^N$ -fold superposition states. The evolution process driving quantum computer operations is called unitary evolution, ensuring all possible states develop in parallel. This means that for a quantum computer with 500 qubits, each computational step simultaneously explores  $2^{500}$  possible configurations—a staggering number surpassing the total number of known atoms on Earth.

## 2) Leap in computational power

In classical physics, physical quantities possess specific values at a given point in time, with units of time. Consequently, the unit of information is 0 or 1, referred to as a bit. This constitutes the fundamental unit of information processing in computers, electronic chips, and transistor current states.

Particles representing the value 1 cannot simultaneously represent particles representing 0. However, quantum physics possesses a fundamental characteristic: at any given moment, physical quantities exhibit uncertainty, making their exact values indeterminate. This distinction sets quantum information units apart from classical information units. In physics, quantum information units are not binary states of 0 or 1, but rather superposition states representing both 0 and 1 states—known as qubits.

Each qubit inherently encodes two classical data points.

Quantum bits are not physical carriers of transistors, but rather exist in two states like physical entities such as electron spin or photon polarization in two-level atoms. A

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quantum bit represents the superposition of these two states. As I mentioned earlier, different states of a quantum bit correspond to distinct information. Traditional electronic chips contain  $n$  bits, where each bit has a definite value, making them classical data storage devices. In contrast, quantum chips consist of  $N$  quantum bits, each representing two classical data states. Therefore, a quantum chip with  $N$  quantum bits can store...

Storing  $2^n$  times more classical data. This demonstrates that it is precisely the uncertainty inherent in quantum properties that enables quantum chips to store  $2^n$  times more data than conventional electronic chips.

The operation of a computer essentially involves modifying data stored on chips, while the working principles of electronic computers and quantum computers are fundamentally distinct.

The former can only modify one data point per operation, with the process involving data alteration, referred to as serial operation. The latter may simultaneously convert all  $2n$  classical data stored in the quantum chip into  $2n$  new data points per operation. This constitutes the physical foundation for the parallel computing capability of quantum computers.

The processing speed of quantum computers depends on quantum algorithms. Applications of quantum entanglement enable the development of highly efficient quantum algorithms. The parallel computing capabilities of quantum computers are demonstrated in practical information processing scenarios, resulting in exponential performance growth that far surpasses traditional electronic computers.

Characteristics of the quantum world, such as additivity (e.g., quantum entanglement), provide quantum computers with exceptional physical performance foundations.

Quantum computing not only possesses the capability of accelerating computations but also transforms certain problems that are difficult to solve on classical computers (such as factorization of large numbers) into solvable problems.

### **3) GEAI magnitude calculation upgrade**

GEAI is primarily utilized for computing upgrade systems, integrating quantum computing and supercomputing capabilities while connecting edge computing

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resources with cloud infrastructure through cloud-based solutions. Secondly, GEAI provides critical support for computing network convergence and establishes pathways for edge computing integration. It enables seamless cloud-network collaboration, allowing effortless control over computing power. Ultimately, GEAI will emerge as a pivotal force driving industrial digital transformation, serving as a bridge between the physical and digital worlds. Key features and attributes include:

- **Connectivity:** Connectivity forms the foundation of GEAI. The diverse physical connections required for GEAI integration with various objects and application scenarios necessitate comprehensive connectivity capabilities, including multiple network interfaces, protocols, topologies, deployment configurations, as well as network management and maintenance. GEAI connectivity leverages and incorporates cutting-edge advancements from the networking domain (e.g., TSN), SDN, NFV, Network as a Service, WLAN, NBIoT, and 5G technologies. Additionally, GEAI addresses interoperability, connectivity, and compatibility requirements through multiple existing application buses.
- **The first approach lies in data:** GEAI serves as a bridge connecting the physical and digital worlds, acting as the primary conduit for data. With massive, real-time, and comprehensive datasets, it enables end-to-end lifecycle management based on data governance and value creation, thereby enhancing predictive maintenance, asset management, and efficiency innovation applications.
- **Distributed architecture:** GEAI supports distributed computing and storage, dynamic scheduling and unified management of distributed resources, distributed intelligence, distributed security, and other capabilities.
- **Convergence:** The integration of OT and ICT serves as a critical foundation for driving digital transformation across industries. As a key facilitator of "OICT" convergence and collaboration, GEAI will support cooperation in the following areas: connectivity, data, management, control, applications, security, and other aspects. The greatest value of GEAI lies in its potential to enable ubiquitous connectivity and

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mutual trust across all entities, thereby transforming interpersonal relationships and fostering trust between individuals and data. By employing peer-to-peer quantum communication technology for data transmission instead of relying on central processing units, computational efficiency can be significantly enhanced while drastically reducing operational and maintenance costs. Moreover, GEAI's transparency allows for optimal utilization of the computing power, storage capacity, and bandwidth distributed across geographically dispersed devices owned by hundreds of millions of idle users for transaction processing, substantially lowering computational and storage expenses.

### **3.3 Machine Learning: Training and Model Algorithms**

Machine learning enables computers to learn from research data and statistical information. On the other hand, artificial intelligence represents an ambitious vision aimed at making machines think and act like humans—a research field that enhances both our cognitive abilities and physical capabilities. Learning serves as one pathway to achieving artificial intelligence, as well as a means to strengthen human brains. Therefore, artificial intelligence inherently encompasses machine learning, which in turn includes deep learning.

Specifically, machine learning along with its branches deep learning and neural networks all constitute subsets of artificial intelligence. Artificial intelligence relies on data processing to make decisions and predictions. Through machine learning algorithms, AI not only processes data but also utilizes it for learning, becoming increasingly intelligent without requiring additional programming. Artificial intelligence serves as the overarching framework encompassing all subsets of machine learning. As the primary subset of machine learning, artificial intelligence forms the foundation upon which deep learning emerges as a specialized branch, while neural network architectures serve as the fundamental basis for deep learning.

#### **1) Working Principle of Machine Learning**

Machine learning encompasses various learning models utilizing different algorithms.

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Based on data characteristics and desired outcomes, learning models can be classified into four categories: supervised learning, unsupervised learning, semi-supervised learning, and reinforcement learning.

Depending on the dataset used and expected outcomes, one or more algorithms can be applied to each model. Machine learning algorithms are primarily employed for object classification, pattern identification, result prediction, and informed decision-making.

While algorithms typically utilize a single approach, their performance can be enhanced through combined methods when dealing with highly complex and unpredictable data to maximize accuracy.

The working principle of machine learning can be summarized in the following steps:

- **Data collection:** Machine learning requires large volumes of data for analysis and learning. These data can originate from various sources, such as sensors, logs, databases, text, and images.

- **Data preprocessing:** Data typically requires processing and cleaning, including noise removal, missing value filling, normalization or standardization, etc.

Preprocessing steps facilitate a better understanding of data algorithms.

- **Feature extraction:** Features are useful information extracted from raw data that can be utilized for prediction or classification. For instance, in image classification tasks, feature pixels may include color or shape.

- **Model training:** Machine learning algorithms are trained based on the provided features. Models are constructed within the dataset. The models may include classifiers, regressors, clusterers, etc. The objective of the models is to achieve accurate predictions of outcomes.

- **Model evaluation:** Model performance is typically measured using the following metrics: accuracy, precision, recall, and F1 score. These metrics facilitate quality assessment and evaluate the model's effectiveness.

- **Model deployment:** After training and evaluation, the model can achieve the expected performance level and be utilized for predicting new data. Model

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deployment can take various forms, such as APIs, applications, real-time deployment, streaming media, etc.

## **2) GEAI machine learning model**

GEAI integrates artificial intelligence algorithms encompassing machine learning models, model training, and inference processes. The system requires the following data samples for model construction and training, including data preprocessing, large-scale distributed training, automated model generation, and on-demand cloud model deployment. It enables rapid AI model development, training, and deployment capabilities while supporting application implementation, thereby achieving full-cycle management of AI workflow models.

The core functionalities of the GEAI machine learning model include:

- **Full Lifecycle Management:** GEAI has established a full lifecycle management model. Version model lifecycle management may be a critical issue requiring deployment into applications. The system enables rapid model release, upgrades, and iterations.
- **Support for diverse training models:** GEAI accommodates both online and offline training modes to meet enterprises' AI requirements and model construction needs under varying data conditions. Access to production processes and operational information—including real-time data—can be achieved through external data import or online methods, enabling automated training and model development.
- **Built-in multi-class learning frameworks:** GEAI features multiple integrated multi-class learning frameworks, including high-performance machine learning frameworks with full-stack capabilities and AI model construction tools such as supervised learning, unsupervised learning, reinforcement learning, and transfer learning.

In general, GEAI supports supervised learning and unsupervised learning, online incremental learning, and deep learning. GEAI features highly flexible scalability, enabling the integration of both built-in algorithms and third-party algorithms.

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By integrating third-party models, it can maximize the collection of expert wisdom and enhance operational autonomy. The system leverages GEAI computing capabilities in human resources management to comprehensively improve production efficiency. It features over 3,300 data inference models and more than 150 graphical models.

### **3.4 Artificial Intelligence Computing Power Network**

Supported by blockchain technology, smart contracts, cross-chain solutions, quantum mechanics, and machine learning, GEAI has built a decentralized AI computing power network.

GEAI's decentralized AI-powered grid power computation system exhibits the following core features:

- **Decentralization:** GEAI employs a decentralized architecture that operates independently of any single entity or organization. Power supply providers and demand calculations can be executed directly on the platform, eliminating intermediary steps and unnecessary intermediaries to enable more efficient and secure electricity resource transactions. **Transparency and Traceability:** All electricity transaction and settlement records are processed through smart contracts on a distributed ledger, ensuring full transparency and traceability.

Users can access detailed transaction records and monitor/audit the entire transaction process.

- **Fair Competition:** GEAI encourages computing power providers to offer high-quality computing resources and provides them with a level playing field. Through smart contracts and algorithm design, GEAI ensures that computing power demanders can select providers that best meet their requirements, thereby promoting equitable resource allocation of computing power.

- **Flexibility and Scalability:** GEAI exhibits high flexibility and scalability, enabling adaptation to power demands of varying scales and complexities. Whether for

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small-scale personal projects or large-scale enterprise computing tasks, GEAI delivers the required robust resources to achieve rapid and efficient computation.

- **Rewards and Incentives:** GEAI encourages community members to participate in the development and management of computational networks. By engaging in transactions and contributing to community infrastructure, participants can calculate electricity supply and demand, thereby earning corresponding rewards and incentives, which promotes stable grid operation.

### **1) Calculate the power supply and contributors**

In the GEAI decentralized AI computing power network, computing power providers play a pivotal role. They are participants who supply computational capabilities and resources, contributing to the normal operation and development of the network.

Here is a detailed description of computing power providers:

- **Human Resource Computing:** Assess the idle resources available to power suppliers for computational power generation, including capacity or dedicated hardware. These resources can be utilized through leasing or sales. Suppliers may connect their servers, GPUs, ASIC servers, and other heterogeneous computing devices to GEAI to provide reliable computing resources for other users.

- **Contribution to Computing Power:** Computing power providers not only supply computing resources but also actively participate in building and enhancing computing power networks. They engage in grid node operations, verification processes, and security maintenance to ensure network stability and security.

Additionally, they offer technical support and community development services.

Their contributions to computing power networks drive innovation and advancement in this field.

- **Incentive Measures:** Used to calculate suppliers' participation and contributions, GEAI establishes an incentive system. Based on the quality and utilization of computing resources, suppliers may obtain resources from computing power providers. Computing power tokens (GEAI) serve as rewards, which computing

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power providers can freely use, transfer, or redeem.

- **Computing market competition:** In GEAI, computing power providers compete to attract users with computational demands. These users select computing resources based on their own computational capabilities, considering factors such as power supply performance, pricing, and service quality. By delivering high-quality computing services, power suppliers can secure more orders and increase profits.
- **Computing Power Holdings and Governance:** Providers may choose to hold Computing Power Tokens (GEAI) that can be exchanged for GEAI-issued computing power shares, thereby becoming shareholders. As shareholders, they gain access to governance decision-making processes including voting rights and proposal submission privileges. They participate in shaping GEAI's operational policies and regulations, driving technological advancement through computational contributions. By actively engaging contributors, GEAI's decentralized AI computing network will cultivate a robust and reliable computing resource ecosystem. The growing pool of computing power providers will ensure GEAI's sustainable development, deliver premium computing solutions to users, and propel innovation alongside digital economy growth.

## **2) Management and Scheduling of Computing Power Networks**

GEAI's decentralized AI computing capability management and scheduling network is implemented through smart contracts and distributed algorithms, which operate automatically and in a decentralized manner.

- **Node Registration and Verification:** Before joining GEAI, computing nodes must complete registration and identity verification. The authentication and registration process can be executed through smart contracts to ensure node legitimacy and Security. After registration is completed, the node's identity and computational capability information will be recorded in the blockchain.
- **Task computation, allocation, and scheduling:** Upon submission, tasks will be assigned to the most suitable computing nodes based on task type, requirements, and

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factors such as smart contract node computing capacity provided to GEAI, including task allocation and scheduling, to achieve efficient task processing and optimal resource utilization.

- **Node status monitoring and management:** GEAI regularly monitors and manages the status of computing nodes. Through smart contracts and node status detection algorithms, it assesses health conditions, computational capabilities, and enables real-time monitoring of resource utilization. If computational capacity is insufficient, the network automatically reallocates tasks to other available nodes.
- **Dynamic resource allocation:** GEAI can dynamically adjust resources based on real-time computational demands and resource conditions. Through smart contracts and distributed algorithms, the network can rationally allocate capacity, load, and task priority among computing resource nodes according to factors such as computational power, ensuring efficient task execution.
- **Fault recovery and fault tolerance mechanisms:** GEAI incorporates fault recovery and fault tolerance mechanisms. When a node fails or computation execution fails, the fault tolerance mechanism ensures task failure. Other nodes can take over the tasks of the failed node, perform data backup and disaster recovery to ensure reliability and grid stability.

Through this management and scheduling mechanism, GEAI achieves decentralization by leveraging artificial intelligence for power network computing, enabling efficient task allocation and scheduling, optimizing computational resource utilization, and enhancing computational efficiency.

Overall, decentralized management approaches can ensure fairness, transparency, and security in power networks.

### **3) Security and Privacy Protection of Computing Power Networks**

GEAI, a decentralized AI computing power network, prioritizes security and privacy protection, employing multiple technical measures to ensure safety.

User data and computing tasks:

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- **Data Encryption and Privacy Protection:** In GEAI, all communications and data transmissions are encrypted using advanced encryption algorithms to prevent data theft or tampering. User data is protected, and during transmission, only authorized nodes can access and process the data. Additionally, user privacy information is strictly safeguarded and will not be shared or disclosed.
  - **Access Control and Authentication:** In GEAI, all nodes must undergo authentication to participate in computational tasks and data processing. Through smart contracts and authentication mechanisms, only authorized users can access data. Nodes may join the network but are restricted to accessing only required data and resources. This access control mechanism ensures secure network operations by preventing malicious nodes from joining and unauthorized data access.
  - **Audit and Monitoring:** GEAI conducts regular security audits and monitoring to identify potential security risks and vulnerabilities. By utilizing advanced security monitoring tools and technologies, the network can detect and respond to potential security threats in real time, thereby ensuring network security and stability.
  - **Smart Contract Security:** In GEAI, smart contracts serve as the core security component. Through meticulously written contracts and rigorous security audits, the system ensures the security and reliability of smart contracts. During contract execution, the network performs verification and authorization to prevent the injection and execution of malicious code.
  - **Quantum Encryption:** GEAI employs quantum encryption to enhance security. Leveraging principles from quantum physics, this technology provides advanced data protection. By utilizing quantum encryption algorithms and key exchange protocols, it effectively prevents quantum computing attacks and breaches. These robust security and privacy measures ensure the safety of user data and computational tasks within GEAI's decentralized AI computing network, safeguarding user privacy. Users can confidently utilize the computing network for computational tasks without concerns about data leaks or security risks.

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#### 4) Computing power network scalability and interoperability

GEAI's decentralized AI computing network boasts exceptional scalability and interoperability, enabling it to adapt to evolving computational demands while seamlessly integrating with other systems.

- **Scalability:** GEAI is built on a distributed computing architecture, enabling easy addition of new computing nodes based on computational capacity requirements. This scalability allows the computing power network to adjust according to actual resource demands and scale, thereby meeting growing computational needs.

- **Elastic Computing:** GEAI adopts an elastic computing model that automatically allocates and adjusts computing resources based on task scale and complexity. Nodes and resources are dynamically allocated through computation, enabling the power network to achieve efficient processing and improved task resource utilization, thereby enhancing computational efficiency and overall performance.

- **Interoperability:** GEAI supports interoperability platforms with other systems. Through open APIs and standardized data formats, computational power networks can seamlessly integrate with diverse computing environments and applications, enabling users to perform power calculations, integrate with existing systems and tools, and achieve more flexible and efficient computational processes in networks.

- **Cross-platform support:** GEAI is cross-platform capable of running on various systems, operating systems, and hardware environments. Whether in the cloud, edge devices, or private data centers, computational network power can deliver consistent computing services and functionalities. This cross-platform support enables users to make choices based on their specific requirements.

Suitable computing environment.

- **Standardization and Openness:** GEAI adheres to open standards and protocols, offering interoperable services with other systems. By utilizing standardized data formats and communication protocols, the computing power grid can integrate with various third-party tools and services, enabling broader functional applications and

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collaborative opportunities. Leveraging these scalability and interoperability features, GEAI employs decentralized AI to optimize power grid operations, effectively meeting diverse user needs.

Meanwhile, the application can achieve seamless integration with existing systems to create a computing environment and system, providing users with efficient, flexible, and scalable military services.

### **5) Computing power requirements and application scenarios**

GEAI's decentralized AI computing network finds extensive applications in artificial intelligence, scientific computing, blockchain, and big data analytics. In artificial intelligence applications, the network facilitates deep learning model training and inference, accelerating model development and deployment. For scientific computing, it delivers robust computational power to expedite complex problem-solving. In blockchain and big data analytics, the network processes massive datasets through mining operations, generating more accurate and efficient results. Through these technological solutions, GEAI's computing network provides high-performance, Reliable, and scalable computing capabilities that meet diverse industry demands while driving advancements in artificial intelligence and scientific computing.

#### **✧ AI Application Scenarios**

- **Deep learning model training:** The training process of deep learning models requires substantial computational resources and time. In terms of computational power requirements, GEAI high-performance computing resources can be utilized to accelerate the deep training of neural networks, shorten model training duration, and enhance model accuracy and performance.
- **Image Recognition and Processing:** As a pivotal application in artificial intelligence, image recognition requires processing massive image datasets and complex computations. Users with computational demands can leverage GEAI's high-performance computing resources for tasks such as image recognition, image segmentation, and object detection, enabling more accurate and efficient image processing. Natural Language Processing (NLP) represents another critical domain in

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AI, encompassing tasks like text analysis, semantic understanding, and machine translation. These tasks involve handling vast textual data and intricate computational processes. By utilizing GEAI's advanced computing capabilities, users with strong computational resources can accelerate NLP task execution, significantly enhancing the accuracy and efficiency of text analysis and understanding.

- **Reinforcement Learning:** Reinforcement learning is a machine learning approach that optimizes decision-making through interaction with the environment. It typically requires extensive simulations and experiments to train agents. Users with high computational demands can leverage GEAI's powerful computing resources to accelerate the training and optimization of reinforcement learning models, enabling faster intelligent decision-making.
- **Emergent Models:** Emerging models such as Generative Adversarial Networks (GANs) and Variational Autoencoders (VAEs) require substantial computational resources for training and generating new data samples. GEAI enables efficient resource utilization through computational acceleration, delivering high-performance capabilities for model generation and training that drive innovation in image synthesis, text generation, and related fields. By leveraging GEAI, AI application developers can fully leverage high-performance computing resources to accelerate model training, inference, and optimization processes, thereby enhancing the efficiency and performance of AI implementations. Computing resource providers can customize computational power based on specific needs, select optimal resources, and optimize grid resilience and flexibility to meet diverse task requirements.

#### ✂ **Other application scenarios**

- **Scientific Computing and Research:** Scientific research typically involves complex numerical computations, simulations, and data analysis. Users with high computational demands can utilize GEAI's high-performance computing resources to accelerate the execution of scientific computing tasks, thereby advancing research progress in fields such as astronomy, climate modeling, and genomics.

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- **Financial and Risk Modeling:** The financial industry needs to process massive data and predict risks through complex modeling and analysis. With GEAI, users with strong computational capabilities can leverage high-performance computing resources for tasks such as financial data analysis, portfolio optimization, and risk assessment, thereby enhancing the accuracy and efficiency of financial decision-making.

- **Blockchain and cryptocurrency:** Blockchain technology requires substantial computational resources to support tasks such as maintenance.

Distributed ledgers, cryptocurrency mining, and transaction verification.

Computing power users can leverage GEAI's high-performance computing resources to participate in blockchain network consensus mechanisms, thereby enhancing the security and stability of the blockchain ecosystem.

- **Big Data Analysis and Processing:** With the continuous growth of data volume, data analysis and processing have become increasingly crucial. Users can leverage GEAI's high-performance computing capabilities to accelerate the processing, analysis, and mining of massive datasets, uncovering hidden patterns and profound insights that provide robust support for business decision-making.

Virtual reality and game development require substantial computational power to achieve realistic graphics rendering, physical simulation, and interactive experiences.

The computational demands can be addressed by utilizing GEAI's high-performance computing resources for virtual reality and game development processes, thereby delivering a more immersive virtual world and gaming experience.

By providing high-performance and flexible mechanical resources and computational capabilities, GEAI offers a reliable platform for users across all mechanical computing fields, fostering innovation, enhancing efficiency, and advancing the development of mechanics.

Power demand calculators can determine energy requirements based on their specific conditions, select appropriate resources, and fully leverage their advantages, enabling power networks to achieve success across diverse application scenarios.

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## Chapter 4 Design Model of Token Economy

### 4.1 Economic Symbols

The GEAI economic model is based on computational power tokens (GEAI), encouraging collaboration among various network participants such as power suppliers and demand-side entities, algorithm developers, and SAFTEU investors to form an open, adaptable, intelligent, and sustainable global force model for the development, sharing, and collaboration of artificial intelligence trading networks.

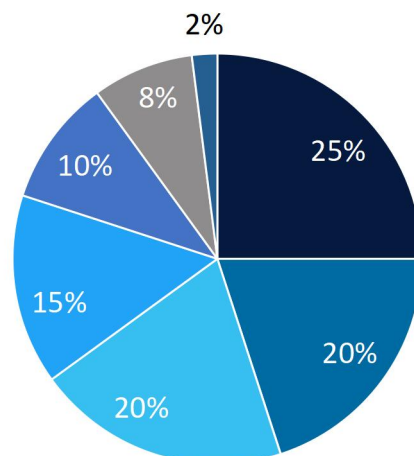
Computational capacity

The GEAI Token has the following features:

- **Media exchange:** Used to pay for computing services and data services, as well as to purchase or redeem artificial intelligence applications and rewards.
- **Incentive mechanism:** Used to reward contributions from electricity calculation providers, artificial intelligence developers, and data providers (e.g., participants).
- **Governance rights:** Used for participating in community development and network governance, such as voting, proposing motions, and delegating authority.

GEAI's issuance plan is as follows:

Distribution plan:



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1) AI R&D and Implementation: 25%

Primarily utilized for AI iteration, distributed AI algorithm development, AI application scenario validation testing, and AI talent recruitment and training. Among these, 70% of the resources are unlocked linearly over three years, while the remaining 30% are unlocked based on the completion of R&D milestones, with distribution subject to review by the Technical Committee.

2) Quantum computing integrated R&D: 20%

Designed for collaborative R&D with quantum computing enterprises, this initiative focuses on developing quantum-AI integrated computing power, applying quantum encryption technology in blockchain, and establishing quantum-scale data processing centers. The program will be implemented in four phases, with 25% of the total resources released annually based on R&D progress.

3) Project construction and operation: 20%

The package covers foundational infrastructure costs including GEAI public blockchain architecture deployment, node deployment, server maintenance, ecosystem operations, market promotion, and partner acquisition. 50% of the cost is unlocked linearly over two years, with the remaining 50% released based on project milestones.

4) Ecological contribution mining: 15%

This incentive program rewards data contributors, node maintainers, AI model developers, and DApp developers within the ecosystem. Rewards are distributed based on user contribution values through mining, with daily settlements and no lock-up period—rewards are earned immediately upon contribution.

5) Community governance and incentives: 10%

Designed for community voting, eco-initiatives, node elections, and community events, this system safeguards participants' rights while boosting governance

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engagement. It features a two-year linear unlock schedule with monthly releases of 4.17%.

6) Strategic reserves: 8%

Designed to address emergent needs during project development, strategic investments in high-quality AI/blockchain projects, and ecological emergency subsidies, these funds are centrally managed by the foundation. No more than 2% of the total amount is released annually, and their utilization requires approval through community voting.

7) Team and key contributors: 2%

Designed to incentivize core development teams, technical consultants, and key ecosystem contributors, this program unlocks rewards in four annual phases. Unlocked portions are forfeited upon resignation, while the rewards remain tied to the team's long-term growth trajectory.

## 4.2 Token Governance Model

The proof-of-stake mechanism enables decentralization and community engagement, with its core logic summarized as follows. You may encounter similar networks elsewhere, particularly Cosmos and EOS.

- Tokens held by token holders (including validators) can be "staked" as collateral.

Token holders may delegate their tokens to any validator or potential validator candidates, then choose different validators or candidates to re-verify their tokens. All candidate validators are bound by their token holdings, with the highest token quantity determining their status as the final validator.

The verifier may share (partial) blocking rewards with the trusted party.

Verifiers may face penalties for misconduct, such as double signatures or unstable transactions. The system periodically removes "binding" between validators and clients to ensure the effectiveness of its seasonal misconduct detection mechanism

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CARDS, during which stake deposits will be confiscated. Verifier updates and reward distributions occur around 0:00 UTC daily to minimize the costs associated with frequent commitment updates and block rewards. Allocation costs may be substantial as block rewards are collected on-chain, with deliberate delays intentionally introduced in the distribution process between GEAI validators and trustors.

To ensure equitable distribution:

The block reward is not immediately distributed to validators but is released in batches and recorded into the contract.

- Upon receiving the updated validator set, GEAI triggers multiple on-chain transfers throughout the process to move rewards to validators' managed addresses. As the custodial addresses are system-owned, the rewards are also system-owned and cannot be used until distribution to trustors is finalized.

To simplify synchronization and allow time for penalties, the N-day reward will only be distributed after N+2 days. After the principal receives the penalty, the remaining amount will be transferred to the validator's reward address.

#### 1) Chop finely

Downgrading constitutes a component of on-chain governance designed to penalize malicious activities. Any entity may submit GEAI slashes. Transaction submissions require evidence demonstrating cost reduction and fee reductions while simultaneously achieving greater returns. To date, two cases have been identified that can be excluded.

#### 2) Double bidding

When multiple elements signed by validators exhibit identical heights relative to the parent block, this constitutes a critical security vulnerability that likely represents deliberate malicious intent. Such logic should have been implemented in protocol implementations, meaning the issue only affects malicious code execution. The occurrence of double signatures must be immediately remediated. The problem originates from validator set validation processes. Any entity may initiate slash requests using GEAI, where signature evidence must contain two blocks with

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identical heights and sealed by compromised validators. Upon receiving such evidence, validation procedures must be strictly enforced to ensure integrity:

The GEAI validator set instance has been updated on-chain, with validators removed from the validator concentration.

A predetermined amount of GEAI will be deducted from the validator's commission, with neither the validator nor the client guaranteeing any rewards.

The slash-separated GEAI portion will be allocated to the submitter's address, representing a reward exceeding the submitted amount to significantly reduce transaction costs for requests.

The confiscated GEAI will be allocated to addresses managed by other validators, with block rewards distributed to all participants in the same manner as the original entity.

### 3) Not available

The operational viability of GEAI depends on all members within the Proof-of-Stake validator pool. This system requires validators to generate blocks promptly during their verification rounds. However, validators may occasionally miss their validation windows, and any system failure—whether hardware failures, software glitches, configuration issues, or network disruptions—could trigger system collapse. Such instability compromises performance and stability, introducing additional uncertainties. To mitigate risks, an internal intelligence unit should be established to monitor each contract verifier's oversight metrics. When these metrics exceed predefined thresholds, validators' forward block rewards will be withheld and redistributed among more reliable peers.

If validators underperform, their voting eligibility should be progressively revoked as they exit the network, since their clients will receive reduced or no rewards. Should the index remain elevated and exceed higher thresholds, validators will exit the rotation cycle, causing GEAI to expand backward. A predefined portion of GEAI will then be extracted from self-delegated GEAI to determine the number of GEAI

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validators. Following validation failure, clients will be unable to receive their promised payments.

#### 4) Governance parameters

A variety of system parameters can regulate GEAI's behavior, such as penalty amounts and cross-chain transfer fees. All these parameters determine the GEAI validator set through a voting process based on their commitments.

### 4.3 Value and Realization

#### 1) Investment Value

The investment value of GEAI tokens is primarily reflected in the following aspects: enormous market potential requiring accelerated development, technological innovation with computing power emerging as a key focus, and strategic competition in the digital economy. GEAI has become a global force. Through AI-powered network sharing and collaborative computing in power grids, it capitalizes on development opportunities as reported by The Times, leveraging technological and market advantages to unlock and enhance value creation.

Supply-demand relationship: GEAI represents a scarce and valuable computational military resource. When evaluating power supply, GEAI value increases when supply exceeds demand and decreases when demand outstrips supply. Market trends indicate a chronic power supply shortage, which will continue to drive up GEAI value.

- Multi-tiered benefit sharing: Holding GEAI tokens not only provides access to the convenience and advantages of computing power services and data services, but also enables participation in GEAI governance and development. This includes voting rights, proposal submission, feedback mechanisms, network direction-setting, rule-making processes, and direct benefits. Additionally, GEAI shares can be held to exchange for computational power, thereby unlocking capital market value.

#### 2) Withdrawal channels

There are three primary implementation methods for GEAI tokens:

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To maintain the scarcity and stability of GEAI tokens, the Square project periodically recycles GEAI tokens and periodically burns a certain quantity of GEAI tokens in the market. Recycled GEAI tokens are redeemed at market prices, generating cash returns for holders. This means the circulation of GEAI tokens will gradually decrease, while their value will progressively increase.

Computing electricity market transactions with artificial intelligence: GEAI possesses massive electricity demand, and its supply involves artificial intelligence, big data, quantum computing, blockchain, and other fields. Users holding GEAI tokens can trade various assets.

In the computing market, computing services and data services are designed to achieve the following objectives:

- Transition to computational stocks: In the future, GEAI will launch the world's first computational-based stock exchange on a stock exchange platform, enabling proportional equity exchange of computational power and access to capital value markets.

## **4.4 Market Incentives**

In the early stages, we will distribute GEAI tokens through airdrops and rewards to attract more followers to GEAI. Within the GEAI ecosystem, users can enjoy a range of incentives including thank-you vouchers, fee waivers, asset appreciation, profit rebates, regulatory compliance, and voting rights. GEAI will implement various incentive measures to benefit its ecosystem, with tokens awarded to the liquidity system serving as rewards for users. The user community will benefit from incentive mechanisms for GEAI token holders, along with all community rights and interests. The initial distribution channels for GEAI tokens include online exchanges, KOLs, news media, and communities. Multi-channel distribution strategies involve registration-based coin distribution, partner recruitment campaigns, transaction fee reduction initiatives, and efforts to establish community-driven operations. Through community management leadership, comprehensive promotional campaigns, lottery

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events, Q&A sessions, and gift giveaways, GEAI aims to engage both global token advocates and new users, demonstrating its resolute commitment to advancement. Post-launch, acquisition programs and incentive mechanisms will be implemented. The token's circulation ecosystem will continue to evolve, offering rewards through official missions, data resources, and secondary asset trading/exchange capabilities. In the future, GEAI tokens will be utilized across various application scenarios. As a digital upgrade platform for the next generation, GEAI's global business network will grant enhanced rights and benefits to users. Cash dividends will be distributed upon accumulating a specified quantity of GEAI tokens. It should be emphasized, however, that GEAI tokens do not constitute a specific investment.

## **4.5 Token Circulation Example**

### **1) Artificial Intelligence Application Circulation**

During the development and service delivery of AI applications, GEAI tokens will be utilized under the following three scenarios:

Developer testing: Developers participating in testing will consume some tokens for model training. Depending on the payment tokens used, the training time for model training will be reduced by 50% and 90%.

- Using DApps: Developers can configure DApps as paid applications, while users can also utilize DApps.

Payment of tokens is required to utilize these artificial intelligence services, such as applications for predictive analytics. Purchasing AI training services: Acquiring AI training services from third parties enables the implementation of more complex models (which may incur training costs) that can be pre-trained. GEAI tokens serve as the payment currency.

### **3) User scenario dissemination**

Trading: In the early stages of quantitative trading when machines were initially employed as auxiliary tools, analysts utilized various quantitative models to design

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indicators, analyzed data distributions, and integrated machines as a cohesive system. This practice persisted until recent developments.

With the rise of machine learning, data can be rapidly analyzed and fitted on a large scale, enabling predictions to be made with greater accuracy in performance forecasting.

Future financial products will require substantial artificial intelligence to achieve their objectives, particularly models for computational capacity. Traditional approaches necessitate the establishment of a dedicated data center for each trading department. Shared computing capabilities can reduce costly maintenance expenses, enabling financial trading firms to focus more on self-prediction. GEAI tokens can serve as a quantified trading medium for payments.

- **Artificial Intelligence Learner Program:** Universities are launching AI courses, a trend expected to grow in popularity over the next few years with increasing student participation. While small-scale tasks are typically handled locally, time-consuming computations are deployed on external servers. However, these task fragments can be fully resolved using cloud blockchain technology. Low-cost AI computing services are particularly well-suited for students to complete diverse computer-related exercises.

Quickly modify your model.

- **Physical circulation:** GEAI tokens will also be able to circulate on a broader scale.

Their applications span a wide range of fields, including smart vehicles, AI robots, intelligent manufacturing, smart energy systems, unlimited home entertainment, connected drones, social networks, and AI-assisted scenarios. Within the application ecosystem, GEAI tokens will serve as the only valuable token in circulation.

#### 4) Cross-chain ecological cycle

GEAI and Ethereum's Fang, BSC, EOS, along with other mainstream public chains, enable the application of GEAI tokens across these platforms. The platform and diverse use cases significantly enhance the value of these applications.

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The implementation of GEAI tokens and cash flow between mainstream fiat currencies. As a connecting medium, GEAI tokens enable comprehensive integration with major exchanges, supporting payment processes across all components of the GEAI token trading ecosystem—including payments, transfers, fiat transactions, token deposits, withdrawals, voting, STO gateways, token pairing, lending, charitable initiatives, gaming, retail platforms, and other circulation scenarios.

In the future, GEAI tokens can be utilized in GEAI foundational models for:

- Encourage users to participate in GEAI network asset transactions to earn transaction fees and notarization fees, while jointly maintaining security.

The GEAI network, incentive transaction nodes, and notarization nodes are designed to support mining operations.

- Early-stage equity valuation facilitates consensus-building, enabling GEAI token issuance and achieving system-wide agreement;
- Enables the GEAI ecosystem to implement advanced smart contracts, mitigates network performance degradation caused by "logic bomb" contract execution, and incorporates anti-fraud mechanisms; The GEAI ecosystem's monetary infrastructure provides token characteristics and asset liquidity foundations corresponding to DApp currencies.
- As the custodian of GEAI DApp's underlying infrastructure, we manage operations to enhance product visibility and market exposure.

GEAI is designed to accommodate diverse business needs and fulfill cross-domain data sharing requirements. By leveraging enterprise business chains, GEAI demonstrates exceptional versatility and standardized data recording methods, capable of representing both structured and unstructured information while meeting cross-chain compatibility standards. This capability enables GEAI to expand its business scope effectively.

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The tokens establish a shared value foundation, facilitating the circulation of GEAI tokens and enabling their application across diverse scenarios in various industries worldwide.



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## Chapter 5 Supporting Ecological Construction

To meet market demands, GEAI supports ecosystem applications including digital identity (DID), digital wallets, trading platforms, and cryptocurrencies, aiming to provide comprehensive support for widespread AI adoption.

### 5.1 Digital Identity (DID)

Digital Identity (DID) employs secure and decentralized methods to provide trusted authentication for artificial intelligence applications. Users access GEAI through a unique digital identity verification code, utilizing highly confidential and authenticated DID technology to identify human identities.

The value of DID to GEAI:

- DID facilitates the creation of GEAI numbers and identity verification through GEAI systems. By leveraging DID technology, unique identities are established, enabling diverse expressions of self-identity. This technology ensures that another individual cannot exist independently of you (through exclusive digital identity).
- DID is utilized across multiple scenarios within GEAI: In GEAI's digital identity framework, DID serves authentication, digital wallets, and digital asset transactions, while also being implemented in diverse DID application contexts. DID can be employed for digital wallet operations and digital asset trading. The technology enables secure identity verification without compromising sensitive personal data. DID serves as the gateway to GEAI's digital economy. Within the GEAI digital economy framework, DID enjoys extensive operational flexibility, enabling it to deliver a wider range of services and scenarios.

### 5.2 Digital Wallet

We are launching the GEAI Digital Wallet, a digital wallet designed for storing, exchanging, managing, and paying with cryptocurrencies. To enhance accessibility

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for everyday users, the GEAI Digital Wallet adopts an SPV (Special Purpose Vehicle) model, enabling wallet access through a dedicated webpage interface. The wallet utilizes SSL encryption and supports Symantec CA certificates, while also offering both cold wallet and hot wallet functionalities.

- **Cold Wallet:** Designed for high-capacity cryptocurrency wallets. When the wallet's public/private keys are offline, users can generate any preferred key pair and activate it immediately after selection. The system provides public keys to accept large-value digital currencies starting with G, while host-hosted private keys begin with S.

- **Hot Wallet:** Hot wallets are ideal for small-scale, fast digital currency transactions. The keys are managed by designated personnel. When a user registers a wallet, the keys are securely stored. Within the account, the private key generated from the user's payment password is

The data will be locally encrypted on the user's computer using 3DES, and the encrypted results will be securely stored in the wallet cloud via the SSL protocol.

In other words, the hot wallet's key information is transmitted over the network, while users' encrypted data is stored in the cloud. Only the owner has access to it, and no one else can retrieve it. Wallet users can obtain the raw content of their private keys.

When signing transactions, the custodian retrieves the private key from the following locations:

The cloud server of the wallet decrypts the content on the user's device, where the user enters the payment password via their local computer. Upon successful decryption, the local wallet program signs the transaction, utilizes the private key to provide transaction details, and submits them to GEAI for processing within the digital wallet network.

### **1) Multi-factor security verification**

In addition to allowing users to retain their own wallet keys and private keys, the GEAI digital wallet incorporates multi-signature technology for enhanced security. It features two-step authorization verification for managing various cryptocurrencies, with optional mobile verification methods. During transactions, the system employs

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verification codes, fingerprint recognition, and facial recognition technologies to ensure comprehensive protection of digital currency security.

## **2) Dual Wallet Application**

The GEAI digital wallet offers user-friendly functionality with both cloud-based and two local wallet options, allowing users to choose their preferred payment method.

- **Cloud Wallet:** Enables instant transfers between cloud users with zero additional steps, incurring no account transaction fees. The system securely stores private keys, user addresses, and transaction records in the cloud without accessing user assets.

Users can recover their cloud accounts through username, password, and facial recognition verification.

- **Local Wallet:** Users retain full control over their private keys, ensuring enhanced security for digital currencies. The system allows any number of users to hold master key accounts (i.e., keys) within local wallets, with multiple wallet addresses per cryptocurrency enabling seamless asset segregation.

## **5.3 Trading Platform**

GEAI will establish an AI model development and trading platform powered by quantum computing technology. The platform aims to provide comprehensive functions for AI model development, deployment, and management, while streamlining the entire process from creation and testing to deployment and commercialization. This innovation will empower developers, enterprises, and researchers to leverage AI technologies more efficiently. Traditional digital computers often face limitations in computational capacity and processing speed when handling complex problems and large-scale datasets.

Quantum computers, leveraging their unique parallelism and superposition properties, can accomplish computational tasks that traditional computers require in a significantly shorter time. This enables GEAI's large-scale artificial intelligence

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models to undergo training and learning on larger and more complex datasets, thereby enhancing model accuracy and generalization capabilities.

For instance, quantum computing demonstrates unique advantages in solving combinatorial optimization problems and high-dimensional search tasks, which are frequently encountered in machine learning. By leveraging quantum computing, GEAI models can more efficiently explore vast solution spaces, identify optimal model parameters and architectures, thereby enhancing both generalization capabilities and prediction accuracy.

Furthermore, GEAI will establish an AI application capital market, providing funding and reputation support for outstanding AI projects to enhance their market competitiveness. The GEAI trading platform serves as a global investment system for AI projects. Investors—including individual users, institutional users, traditional funds, and companies interested in the AI market—can easily participate in the investment ecosystem.

The GEAI trading platform operates on a DAO governance model based on global assets, with its management and trading systems transitioning to artificial intelligence. The GEAI commercial investment model fundamentally addresses challenges in project registration, transfer, investment, and cash flow management through decentralized, tamper-proof, and intelligent management systems, thereby reducing investment costs and enhancing investment efficiency.

#### 1) System Composition

The GEAI trading platform consists of two components: an artificial intelligence project investment market and an AI project stock trading platform. It features EIS raw data validation and DAO node functionality.

The voting tool on the GEAI trading platform integrates AI project asset valuation, project credit rating, risk pricing, information disclosure, trading, investment management, and other third-party services to build a global ecosystem for AI project selection, equity trading, node voting, investment funds, and collaborative development.

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The AI project investment market is regulated by specialized institutions, including those responsible for auditing, legal affairs, asset valuation, and industry-specific due diligence. These entities conduct community project screening and evaluation, provide registration and management services for newly listed projects, publish professional project review and valuation reports, and establish professional, visualized, user-friendly, and secure AI project investment registration and management systems.

Meanwhile, the artificial intelligence project investment market provides project information and stores Environmental Impact Statements (EIS). This system utilizes blockchain technology to encrypt and store data across both the storage layer and business application layer, ensuring secure access to stored data through the following methods:

Unauthorized users cannot access the system, and no one can decrypt to obtain raw data. The GEAI trading platform uses CA certificates to digitally sign business data. After real-time data transmission, we will synchronously generate storage documents and store the data file fingerprints on the blockchain. GEAI will act as a witness for asymmetric encryption platform data transmission to ensure process security.

On the artificial intelligence project stock trading platform, the transferor and equity investors involved in network transmission can register for free and transfer the project.

## **2) Transfer process**

- **Project due diligence:** The equity transferor of AI project investments purchases platform tokens (GEAI tokens) on exchanges, registers them for transfer on the AI project investment market, sets transfer conditions, and covers audit, legal, and industry-specific due diligence costs.
- **Investment Project Evaluation:** Shareholding status of the equity transferor in artificial intelligence projects, followed by investment in specialized fields within the AI project investment market. Various institutions conduct evaluations on auditing, legal compliance, and valuation to confirm project rights.

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Upon project approval, the following evaluations will be conducted: The artificial intelligence project equity valuation trading platform will upload investment shares to the project transfer platform, with information simultaneously transmitted to investors.

- **Report Review:** Based on investors' investment preferences, they can search for investment targets published by trading platforms and conduct free searches. View evaluation reports of AI projects of interest in the AI project investment market.
- **Equity Transfer of Projects:** After confirming the investment objectives, investors will purchase platform tokens (GEAI tokens) on the exchange for registration.
- **Project Delivery:** Upon completion of the handover period, the investment shares will be automatically transferred, and the smart contract will be automatically generated. After both parties complete electronic signatures, the artificial intelligence project will commence. Registration will be conducted in the investor's name, and the equity transfer will be fully completed.
- **Project monetization:** Upon completion of handover for an AI project, monetization can be achieved. Participants will redeem the raised platform tokens (GEAI tokens) and exchange them for investments in the project.
- **Revenue disclosure:** Upon project completion, platform tokens (GEAI tokens) will be distributed to the AI project investment market to generate project revenue assessment reports, with earnings per share (EPS) publicly disclosed on the AI project stock trading platform.

### **3) Transaction Payment Method**

As required by GEAI, all transactions between parties must be settled using the platform's designated settlement tool: GEAI tokens. These tokens are exclusively applicable for exchanges during project investment rights transfers and can be recharged unlimited times. The trading price of GEAI tokens shall be based on current market rates.

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## 5.4 Digital Balance

GEAI Digital Copyright Certification will safeguard intellectual property rights, including AI algorithms, models, and data, while fostering greater AI innovation and contributions.

GEAI leverages blockchain's distributed ledger and timestamp features to enable rapid consensus on AI intellectual property ownership across the network, facilitating timely approvals. Asymmetric encryption technology ensures the uniqueness of AI intellectual property rights, while timestamp technology guarantees ownership verification.

In copyright transactions, GEAI blockchain technology enables origin-based tracking of personal data related to AI intellectual property, allowing precise author identification. Furthermore, GEAI establishes a public platform for transaction record storage, empowering IP holders to encrypt AI-related intellectual property content while facilitating automated copyright transactions through smart systems. The entire process operates automatically upon condition fulfillment without intermediary involvement, effectively addressing challenges in content acquisition, profit distribution, and copyright linkage. This enhanced transparency significantly improves transaction efficiency and maximizes creators' returns.

In intellectual property protection processes, AI-related stakeholders frequently encounter challenges such as exorbitant litigation costs and difficulties in tracing infringers. GEAI leverages blockchain's asymmetric encryption and timestamp technologies to clearly trace ownership and transaction chains of AI intellectual property, enabling stakeholders to promptly verify rights or identify violators while providing evidence for enforcement actions. These issues not only create operational bottlenecks for rights holders but also allow infringers to evade legal consequences. However, GEAI's blockchain technology application has effectively resolved this critical challenge.

GEAI utilizes asymmetric encryption and timestamp technology to establish clear traceability for ownership and transactions of AI intellectual property. This means that

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upon detecting infringement of an AI intellectual property holder's works, the system can immediately identify the infringement and provide proof of the rights protection period. Specifically, when publishing works, AI intellectual property holders can use GEAI's blockchain technology to digitally sign their creations, storing both the signature and content on the blockchain. If someone attempts to steal or infringe upon the holder's works, the owner can quickly identify the infringer by comparing the digital signature in GEAI and take appropriate rights protection measures.

Furthermore, GEAI can significantly reduce copyright protection costs. Traditional copyright protection methods often require substantial human, material, and financial resources, whereas GEAI technology enables automation of the copyright protection process through smart contracts and similar solutions. This allows AI intellectual property holders to protect their rights more efficiently while lowering overall copyright protection expenses.

In summary, GEAI has revolutionized AI intellectual property protection. By streamlining processes for rights identification, transactions, and safeguards, GEAI provides AI rights holders with enhanced security and reliability. As GEAI technology continues to evolve and mature, we can confidently anticipate a brighter future for AI intellectual property protection.

## **5.5 Technology Incubation**

GEAI will collaborate with leading innovative enterprises and top-tier institutions to establish a technology incubation center. This center will provide technical guidance, resource sharing, and opportunities for close collaboration with GEAI's technical team to startups and AI project developers, fostering the emergence of more innovative initiatives.

The GEAI Technology Incubation Center will focus on independent technology research and development, industrial applications, and governance models.

Meanwhile, the GEAI Technology Incubation Center will provide technical guidance,

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resource sharing, tool support, in-depth exploration, and high-quality AI investments for practitioners and developers in the field of artificial intelligence.

## 5.6 GEAI Community

The GEAI community will establish a global artificial intelligence community to promote broader development, integrate AI into social life, and provide robust support for healthy development. With a vast community of members—including hundreds of thousands of developer members and enterprises—sharing projects and fostering their application, it serves as an ideal platform for impact.

- **Wide-ranging professionals:** Engaging AI practitioners, technical experts, entrepreneurs, and enthusiasts to ensure applications receive accurate feedback, attention, and support. **Global diversity coverage:** Spanning every region and industry, with extensive information dissemination and diversified communication methods to provide multifaceted marketing channels.
- **Accurate marketing feedback:** Collecting feedback and needs globally to help entrepreneurs understand market dynamics and optimize products, innovations, and development.
- **Spirit of collaboration:** Joint efforts, mutual encouragement, and persistent endeavors to promote the development of artificial intelligence technologies have fostered a positive community atmosphere.
- **Professional Promotion Team:** By integrating community resources, organizing online and offline events, and developing effective promotion strategies, we help artificial intelligence applications stand out in the market and enhance their competitiveness through our strategic approach.

1) Community operation mechanism

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The GEAI community operates with DAO at its core, forming a decentralized AI community organization with long-term influence. Under this operational model, all GEAI token holders are entitled to participate.

In the GEAI community, adhering to the fundamental principle of 'one token, one vote,' all members collaboratively establish a scientific governance framework to achieve direct action objectives (DAO).

Governance is goal-oriented, process-driven, and outcome-focused, with different users potentially holding varying voting weights. Exchange addresses are ineligible to participate in voting.

Development of the GEAI community:

- Community Development Matters
- Proposal on GEAI Token Economics
- Key model parameters of the GEAI public blockchain
- Cooperation and Development of the GEAI Community
- Marketing activities, communication, and collaboration
- Other matters related to marketing strategies

In the future, GEAI token holders will gain full control over the GEAI community and public blockchain, enabling them to determine strategic directions, market expansion plans, technical roadmaps, asset security protocols, and ecosystem incentives.

## **2) Community Layout**

As a community-driven initiative, GEAI's core philosophy embodies decentralized values. Our global partners, particularly in community engagement, wield substantial influence worldwide. We will promote our initiatives through community channels, with GEAI events taking place in communities across 120 countries including the United States, Australia, Singapore, Japan, France, and South Korea. Embracing blockchain technology's decentralized principles, the GEAI community will

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progressively evolve into a fully autonomous ecosystem rooted in collective community power and prioritizing user interests.

Organizing AI communities. The GEAI community adopts a globally distributed collaborative office model, bringing together parties with significant advantages and aligned philosophies to practice decentralized values, achieving shared benefits, shared responsibilities, and co-governance with the community and users. In the future, the GEAI community will evolve into an AI autonomous alliance integrating capital markets, startup technology teams, investors, and users.

## **5.7 Quantum Computing Capability**

In recent years, with the continuous application of scientific research achievements, specific application scenarios of quantum computing have gradually been explored in fields such as cryptanalysis, material design, drug development, artificial intelligence, weather forecasting, battlefield analysis, command decision-making, big data, and banking finance.

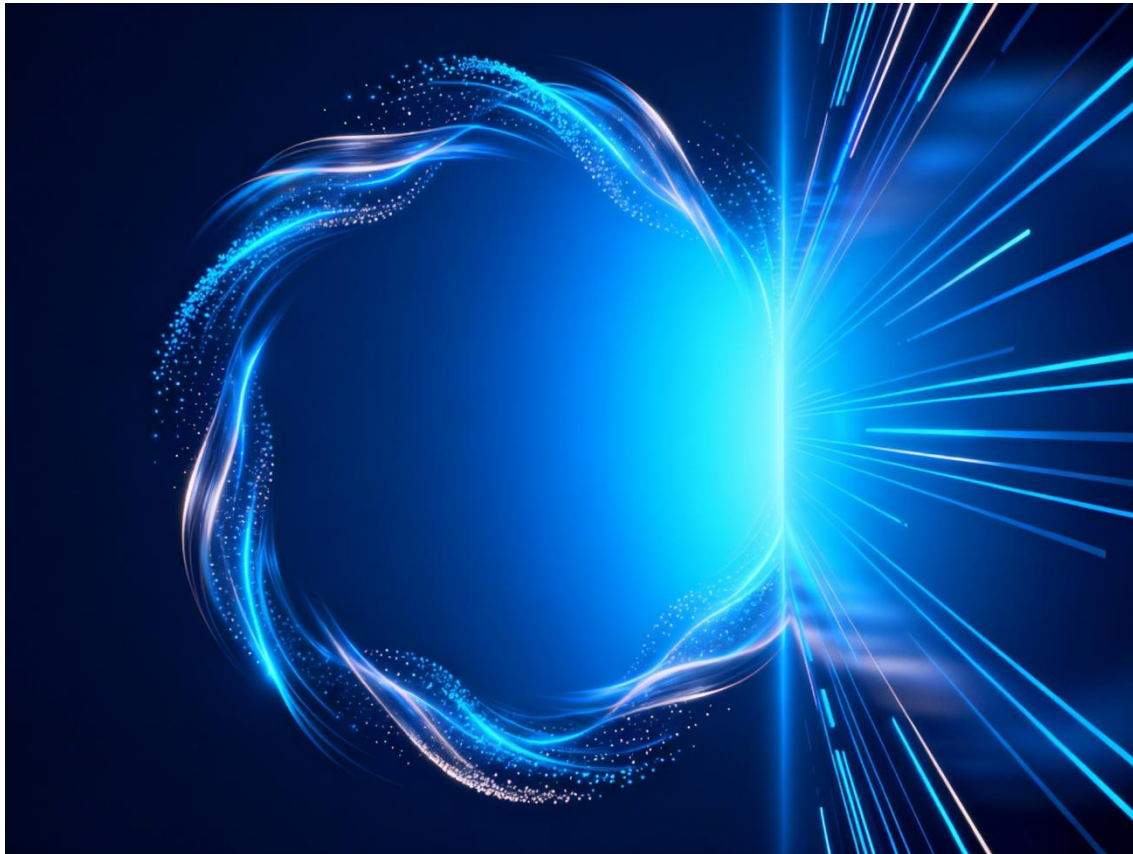
According to Reportlinker, the quantum computing market was valued at \$800 million in 2021. Countries worldwide continue to increase investments, and the coordinated development of quantum computing theories, experiments, hardware, and software will sustain its robust growth momentum. The Boston Consulting Group projects that the global quantum computing application market will reach \$2 billion by 2035, with this figure projected to surge beyond \$260 billion by 2050.

The emergence of ChatGPT has propelled big data and large-scale model applications to achieve another leapfrog advancement, accompanied by continuous growth in computing power driven by cutting-edge technologies. As the primary source of computing capacity, traditional computers centered on physical chips have reached a "bottleneck phase" in performance upgrades, with physicists proposing that the "Moore's Law" will eventually become obsolete. Meeting societal demands with sufficient computing power has become the fundamental direction and goal for future technological development.

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As a pivotal branch of cutting-edge technology, quantum computing is hailed as the "primary engine" of the next technological revolution. Consequently, an increasing number of nations are intensifying their R&D investments in quantum computing to secure strategic advantages in future technological advancements.

GEAI is committed to building a robust AI support ecosystem, fostering close partnerships between environmental protection organizations, quantum computing laboratories, and research institutions. Together, they will explore and lead the evolution of AI applications to achieve faster processing speeds, higher efficiency, and reduced reliance on traditional hardware. This initiative will provide developers and enterprises with greater flexibility, lower hardware upgrade and maintenance costs, and accelerate the widespread adoption of AI technologies.



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## Chapter 6 Disclaimer

The content of this document is for reference only and does not constitute any investment advice, solicitation, or offer to sell GEAI shares or securities or its affiliated companies. Such offers must be made in the form of a confidentiality memorandum and comply with relevant securities laws and regulations.

The content of this document shall not be construed as mandatory participation in a token public offering. Any actions related to this white paper, including requesting a copy or sharing it with others, shall not be considered participation in a token public offering.

Participation in the public offering of tokens signifies that the participant has reached the legal age, possesses full civil capacity, and that the GEAI project contract is authentic and valid. All participants voluntarily sign the contract and fully understand its terms prior to signing the GEAI project contract.

The GEAI team will continue to make every reasonable effort to ensure the accuracy and authenticity of information contained in this white paper. During development, the platform may undergo updates, including but not limited to platform mechanisms, tokens and their operational frameworks, as well as token distribution methods. As the project progresses, certain sections of this white paper may be revised in subsequent editions. The team will publicly disclose updated content through official website announcements or new white paper releases. We appreciate your understanding and participation.

Participants should promptly obtain the latest version of the white paper and adjust their decisions accordingly based on updates. The GEAI project explicitly states that GEAI shall not be held liable for participants in any of the following circumstances:

- (a) depends on the content of this document;
- (b) The team will spare no effort to achieve the objectives mentioned herein, notwithstanding any inaccuracies in the information provided and any losses resulting from actions taken pursuant to this document.

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However, due to force majeure circumstances, the team cannot fully guarantee the completion of this project. As an official token, GEAI serves as a critical tool for enhancing platform efficiency rather than an investment product. Holding GEAI does not confer ownership, control rights, or decision-making authority over the platform. GEAI, as an encrypted token utilized within the GEAI project ecosystem, does not fall under any of the following currency categories:

- (a) bond ;
- (b) Equity in a legal entity;
- (c) Shares, bonds, bills, warrants, certificates, or other instruments granting securities or any rights thereof.

The added value of GEAI depends on market rules and demand after application implementation. It may hold no value whatsoever. The team makes no commitment to its added value and assumes no responsibility for consequences resulting from its value increase or decrease.

To the greatest extent permitted by applicable laws, the team shall not be liable for any damages or risks arising from participation in the token public offering, including but not limited to direct or indirect personal injuries, loss of business profits, loss of business information, or any other economic losses.

The GEAI project will comply with all regulatory requirements and industry self-discipline statements that promote healthy industry development. Participation constitutes full acceptance and cooperation with such inspections. All information disclosed by participants for inspection purposes must be complete and accurate. The platform has clearly informed participants of potential risks. By participating in a token public offering, participants acknowledge their understanding and acceptance of the terms and conditions outlined in the detailed rules, and assume full responsibility for any risks associated with the platform.