AN APPROACH OF INTEGRATING BLOCK CHAIN WITH ARTIFICIAL INTELLIGENCE

[1]M. Harikishna, [2]J. Sheik Mohamed, [3]M. E. Palanivel
[1]III MCA, SITAMS, Chittoor, A.P.
[2]Asst. Professor, MCA Department, SITAMS, Chittoor, A.P.
[3]Professor, MCA Department, SITAMS, Chittoor, A.P

Abstract : This is not surprising to Artificial intelligence (AI) and black chain conviction. Both technologies have the same scientific complexity and multi-dimensional e-commerce proportions. However, a common error in the concept of the black chain is that "a black chain spreads, and consequently it is a blank panel". But the main development of a block chain scheme is unacceptable to a group of required manufacturers. Take a smart contract as an example, which automatically manages the codes and data and operates in the black chain through various human computer operators. It's less bad, spaces and lack of errors. A brief explanation of how artificial intelligence can be used to provide an error-free smart deal to achieve the goal of block chain 2.0, we have found that we can help or develop Black Chain employment through various AI methods. The AI and the Block Chains Coalition can create many options.

IndexTerms - Block chain technology, Artificial Intelligence.

I. INTRODUCTION

1.1 Artificial Intelligence

Intelligence is the ability to log out information outside the intellect. There are two types of surveillance in nature and are special intelligence and cluster intelligence. As the name suggests, the AI is complete from both words, artificial and intelligence, so it is artificially completed intelligence. Various types of artificial intelligence techniques have been suggested and include nervous systems, support vector machines, and fuzzy logic. These techniques are based on lost data estimates, limited elements of models, efficiently used in financial and robotics.

1.2 Block chain

In the simplest word, the black chain refers to the permanent digital ledger structure. A popular feature of the block chain technology is its spread implementation style. This was originally created from Wikipedia, which is now possible in many domains. More ideas about the black chain can be started in several publications [2].

1.3 Block chain 2.0

According to [2], indicates the next key stage of the development of the block chain 2.0 block chain. Since the block chain 2.0 is under construction, some of the emerging concepts of this category, smart contract, smart property, decentralized independent agencies and others.

II. ARCHITECTURE OF AI WITH BLOCK CHAIN

As a method of focusing in this article is to show how AI equipment can help block chain technology. Thus, the following features shown in Fig are useful as the starting point for creating the AI and the black chain. These symptoms were recognized by Korea [3].

2.1 Sustainability

AI's policies have long been used to adjust large-scale systems (eg, electrical system planning and operation). On the other hand, intelligent optimization algorithms are also the basic tools to analyze micro economics. Generally, the Black Chain (or Distribution Ledger System) and Microeconomics are both large-scale distribution systems, with significant connections. According to the principle, there are many similarities to the black chain system (including various nodes, such as full node, mining node, and light node) and micro finance (including the social system with producers, consumer and markets): modified interconnected subsystems, distributed calculations, etc. . Extensive warning of microeconomics is the use of consumer use and rare resources in various applications aimed at increasing prospective producers. A mixed perspective of the fuel feeding optimization of the AI-based block chain system can be traced from the focus of large-scale complex systems [4].

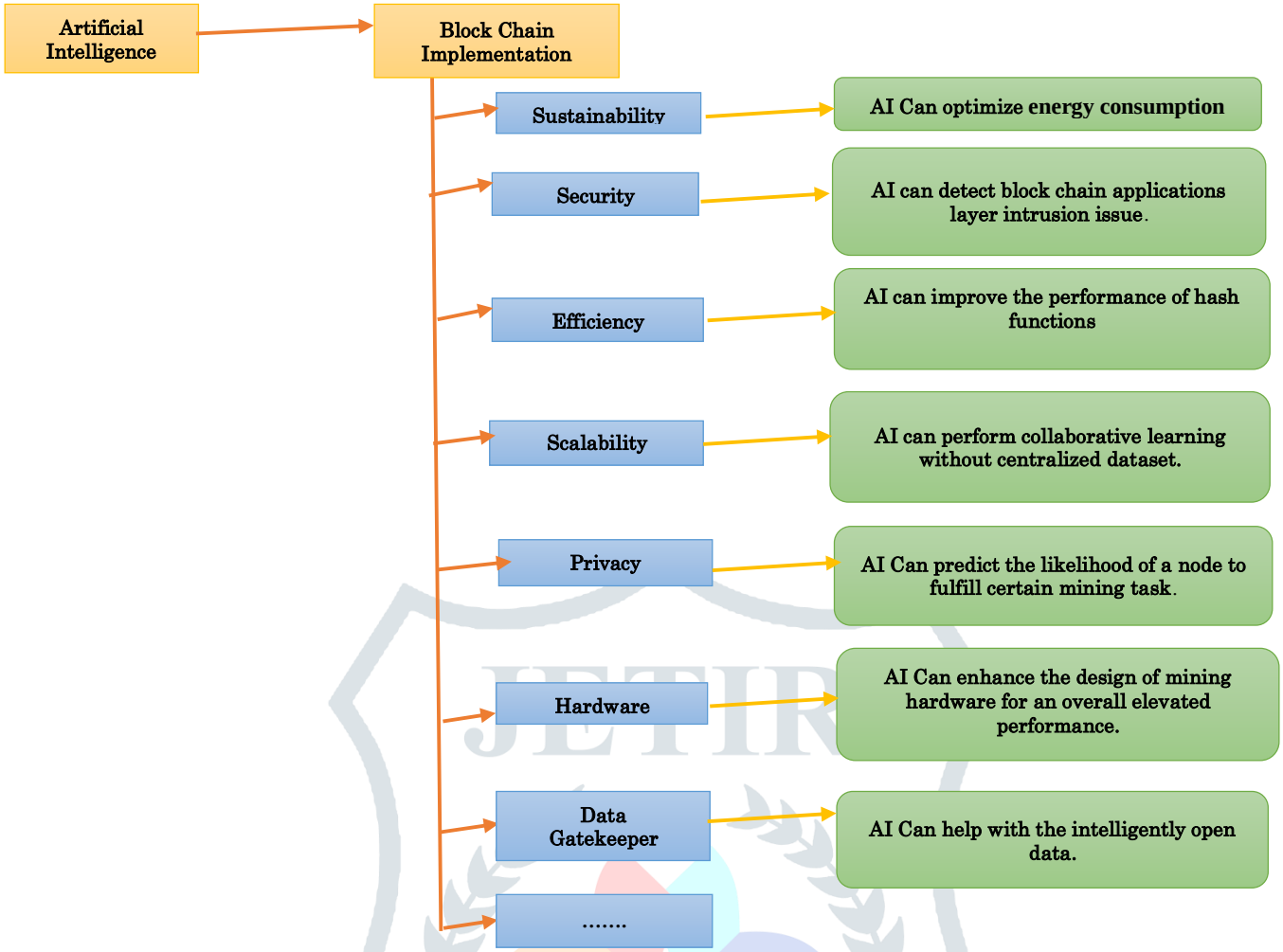

Figure 1: System Architecture for AI with Block Chain

2.2 Security

The security concerns of the block chain system are parts of layer weakness (service, smart contract), data encryption mechanism, etc. Weakness applications layer, intrusion detection system (IDS) and intrusion security systems (IPS) components for watching various threats. Ideas are usually applied in this direction to influence the Ids, Swarm intelligence [5] (the sub-branch of AI that seeks inspiration from groups of different biological systems). About Black Chain Data Encryption Policy, computational intelligence (another key component of the AI) also plays a significant role in traditional and modern cryptography systems. This kind of cryptography (e.g., cellular automata and DNA computing), cryptanalysis (eg, evolutionary computation) and hash function (artificial neural network). Usually, the benefits of computational intelligence make more powerful ciphers and the restoration of the block chain system can be improved by computational intelligence through an improved system attack-protection process.

2.3 Scalability

Scalability in the case of the black chain usually refers to its level of efficiency as it increases the number of users. In training, the problems of spreading can be seen through logging (the time required to verify the transaction), the boottime time (time to correct the transaction) and the cost to the confirmed transactions. Overall, the ability of the block chain system is one or more of these scalability issues incomplete. Because each block transaction has a positive size, directly centralized data mining techniques are struggling to deal with this situation. However, the novel AI algorithms (Safe, Federated Learning) can be learned from the sources of information distributed, giving global optimal solution for the target block chain system.

2.4 Privacy

Confidentiality with additional and additional personal data embedded in the black chain system, data encryption becomes a bloated problem for users' privacy. This feature is relatively small in relation to the previous security issue, in which we have shown an important role for the AI. Take the Bit coin block chain system, which uses elliptical curves on the basis of private and public key generation. But, for now, no one has succeeded to develop a stupid public key algorithm. To solve this complexity, various secret search tables are used together to search the bits of a secret key.

2.5 Efficiency

Efficiency in the black chain network is not always sufficient to keep the entire transaction certification performance necessary. When we use it to track some content mobility in a large commentary space, the entire maximization strategy is different mining nodes (i.e., excluding transportation costs). The Network Software Maximization (NUM) model helps us to monitor the traffic in the computer networks (including the Internet and the emerging black chain network), while looking for a solution for routing and scheduling. NUM primarily consists of two types of functional performance functionality, with its tone and non-declining properties, and most practical situations, most of the available resources are not known by a handset. Hence, it will conduct agile and dynamic practices to assess AI resources and to improve performance of the entire system.

2.6 Hardware

Hardware-specific computer mechanisms (mainly Shenzhen, which China provides) play a key role in implementing a black chain system. Current computer architecture is primarily built on the construction of Von Neumann, the Central Processing Unit (CPU), internal memory, external storage, input / output (I / O) equipment and buses). Other computer formats include the Harvard Architecture, RISC (reduced instructional set computer) and the parallel processing structure. In this case, the lining of nerve-inspired neuromorphic hardware [6,7] in a new way. An example of such hardware design is accompanied by hundreds of neurons along with many synaptic phase change memory cells, which are built to control integrate-and-fire and spike-timing-based plastics nucleon models.

2.7 Talent Shortage

The Talent Shortage is currently a possible way to introduce a multigent system, due to the small supply of black chain staff. By creating a different duty-based virtual agent, the process of writing / reading the dealer data from the blocks is completely automated. On the other hand, the AI Aided Online practice can also train the rail benefit and the much-needed black chain talent.

2.8 Data Gatekeeper

Since the data gatekeeper's data budget is widespread, intelligent open data is a major priority. As data revenues built in Black Chain Technology become more accessible, information about their access, use, and semi-production is available to both companies and individuals. The power of AI for this kind of work sets it perfectly.

III. INDUSTRIAL APPLICATIONS

3.1 Banking

Block Chain Banking Applications may reduce $ 20 billion in removing intermediaries and increasing the security and efficiency of banking transactions [8]. See a prominent start on the field, which provides a safe, fast, reliable ending to end customer banking system capable of handling customers, accounts, savings, loans, mortgages and sophisticated financial products. Https://www.thoughtmachine.net/). An alternative block chain banking application, which is a distributed ledger platform, resulting in over 80 years of research and development by R3 early and 80 major financial institutions. This meets the highest standards of the banking industry, and this applies to any commercial scenario. Using Corda, participants can make transactions without the need for excessive trade by the central authorities (see https://www.corda.net/). According to Business Insider, [5] market dominance of black chain technologies, while attempting to effectively reduce cost and support safety and operational efficiency with all major Global Bank Block Chain Technology.

3.2. Payments and money transfers

Costs are significantly reduced by avoiding central power to verify payments and money transfers. Currently, there are good facilities using the technology that is mainly used for assessing bank accounts or for those looking for significant cost savings.

3.3. Health care

Approximately 10% of GDP in developed countries and 17% in the USA (close to $ 3 trillion) health care costs have risen sharply. It means that any effort to improve health care services increases the results of larger savings and block chain technology, while at the same time improving efficiency and protecting lives. Short-term block chain applications are ready to apply and are long term for transforming healthy industries.

3.4. Security and trust

Collect all health data (medical reports, experimental results, x-rays for each patient) in a safe way, using a unique identifier for each person and sharing such data is only permitted with the person's fast approval. Black chain technology eliminates more than 450 health data violations in more than 27 million patients reported in 2016.

3.5. Exchangeability of information

Health information among different actors can easily hinder its effective use to improve health care. Black chain technology is the exchange of information exchange and its quality increases the importance of important purposes.

3.6 Controls over the Usage of Data and Models

Mixing is a very important aspect of black chain technology and artificial intelligence. For example, when you log into Face book and Twitter, hand over the rights to any content you upload on their platforms. The same thing happens when a recorder signed a record deal. The same concept can apply AI data and patterns.

When a data format is designed for the purpose of the model building, you can specify the limits or licenses that permit. The brands of black chain technology are easy to do this way.

To describe, in the black chain system, permissions are viewed as an asset to view or use this data. Similarly coins will be transferred to Cryptocurky platform, and these credits will also be transferred to access information on the network.

Use case: The AI market, through an integrated NET, is an open source protocol and a group of smart contracts for a decentralized market of coordinated AI services. Black chain technology provides an ideal tool for maintaining network transactions on the Singularity Net due to its transaction and bookkeeping benefits. The platform will add an AI facility to the use of the network, instead receiving network compensation tokens. But first, a black chain-based framework should allow AI agents to interact with one another and external customers interactively. Here is its top network architectural diagram.

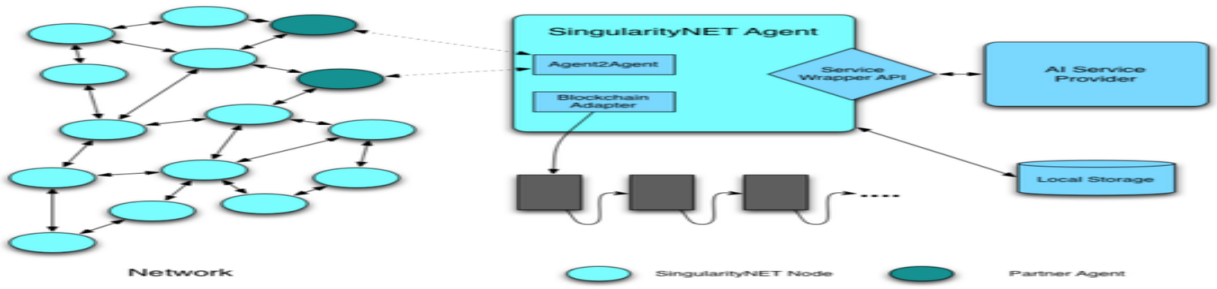

Figure 2: Usage of Data and Models

IV. CONCLUSION

Block chain technology and Artificial Intelligence are most important technologies in the present Scenario. Though both technologies are standalone importance, but still if it is integrated, based on their advantages, it gives solution to many problem in different domains. With this notion, the ideology of integration of both technologies is highlighted with few applications.

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