

IEEE Taiwan Blockchain Forum



- Social Intelligent Infrastructure & Cybersecurity by Blockchain
- November 11, 2023
- Leung Center for Cosmology and Particle Astrophysics at National Taiwan University (Taipei)

Forum Overview

Blockchain is a foundational technology, and it's important to clarify that it isn't always synonymous with cryptocurrencies like Bitcoin. Some have equated Blockchain with FINTECH, particularly due to its transformative impact on international remittance services. However, in this digital age, Blockchain does not merely signify cryptocurrency and is also an emerging core technology. Blockchain offers a wide array of applications beyond the realm of FINTECH.

On the other hand, Artificial Intelligence (AI) stands as one of the cornerstones of this century's technological advancements and the crown jewel in the technical industries, provided that the input data for AI systems is not only abundant but also reliable. The challenge lies in identifying those who have amassed a substantial volume of dependable data and can demonstrate its reliability throughout its transmission across networks. Here, Blockchain can play a pivotal role in addressing this challenge by providing a means to verify, with precision, the reliability of input data throughout its journey within a network.

However, it's essential to recognize that encryption technology alone cannot solve the issue of identifying data collectors. While encryption can protect data communication between parties like Alice and Bob, it doesn't inherently reveal the identities of these individuals. In cyberspace, and even in the virtual world, the use of a certificate authority—a manual process—has been deemed necessary to assure data validity, though it falls short of providing concrete proof. This method is practical but comes at a cost in terms of time and resources, and it assumes that the certificate authority is trustworthy. Unfortunately, even a trustworthy certificate authority may lack the capability to integrate AI seamlessly into the social infrastructure system, leaving the manual process as a shadow in the virtual world indeed.

Nonetheless, there is a consensus that successfully integrating AI into social infrastructure systems can lead to the development of a more diverse and enriched range of AI applications and business. These could encompass various sectors such as disaster prevention, smart factory control (combining IT/OT), automotive technology, medical IoT systems, environmental management systems (EMS), smart energy management systems (SEMS), transportation controls, smart supply chain management (SBOM/ HBOM, and chip traceability), among others, extending beyond virtual interpreters, virtual secretaries, and virtual administrative workers.

The primary factors for achieving success in this endeavor are the precision of AI's responses and cost efficiency. Ensuring the trustworthiness of input data for AI should be accomplished with the least possible expenditure. In the context of the social intelligent infrastructure system, IoT devices and sensors, acting as physical nodes on the network, are responsible for collecting input data for AI. These physical nodes are hardware components comprising IC chip products, emphasizing the significance of having cost-effective chip certification on the network as a foundational element. Another vital consideration is the allocation of Gas fees (i.e., the cost associated with Proof of Concept) in the process. Given the critical role of AI

accuracy in the value of AI products, insurance companies, in particular, should pay close attention to this aspect.

This forum serves as a platform for discussing the technical aspects, business applications, and system challenges of the Social Intelligent Infrastructure System, which may be a fusion of AI, IoT, and Blockchain. We invite leading experts from diverse domains to engage in these discussions and share their insights. Together, we aim to explore the vast potential of this innovative framework.

Hiroshi Watanabe, Organizer of ITBC forum

Sept. 25, 2023