A STUDY ON USE OF IOT AND TECHNOLOGY AT THE MARKET PLACE

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ABSTRACT

Internet of things (IoT) based devices consist of their own sensors, and create several logs in a process, in particular those used for domestic automation. Companies that manufacture IoT devices turn this log data to more usable data via secondary processing; hence they need data from consumers. A data sharing platform has been established recently since the need for IoT data is increasing. Several IoT data markets are built on peer-to-peer (P2P) networks and it is difficult for a company to trust a data owner or the data they wish to trade in in this market. Therefore, we propose in this research a review system which can certify the reputation of the data owner or the data exchanged on the P2P data market. The classic server client review systems have several inconveniences, including security vulnerability or criminal activity by the server administrator. The evaluation system established in the research is based on intelligent Ethereum contracts, which means that it runs on the network P2P and is more flexible to deal with the network issue. In addition, the integrity and immutability of the recorded reviews are guaranteed by the blockchain government leader. Moreover, a specific quantity of gas is necessary for all Ethereum transaction functionalities. Therefore, we evaluated and examined the gas needed performance of our suggested model.

KEYWORDS: IoT, Data, Market Place, Model

INTRODUCTION

Today, it is commonly recognised that "ubiquitous computing" refers to a computer environment that a user is able to access through any device without any time/place limits. Research on ubiquitous computing has advanced consistently for a long time. In 1966, the first omnipresent research examined wearable computing and aimed to connect garments with computers. Ubiquitous computing is a larger phrase; it may thus be subdivided into other sub-topics. One of them is the Internet of Things (IoT). which in recent years has received substantial attention. The IoT refers to a network environment in which a wide range of items, sensors or devices are linked over the Internet to deliver value-added services via a communication infrastructure. The phrase was initially created in 1998 and the fundamental concept behind the technology

is to link people and items everywhere and every time. We shall live in a civilization in the near future in which all our items will be intelligent things linked by the IoT, interacting with one another with minimum human interaction.

Smart houses are an example of an IoT application sector that researchers are investigating to improve people's living comfort. Smart homes, or home automation, are/are one of the several IoT platforms in which appliances communicate with one another as smart objects. The security, temperature, humidity, and energy consumption of a house are all managed by a home automation system, which inhabitants can monitor in real time using smart phone apps. Additionally, developing home appliances integrated with artificial intelligence technology may learn and analyse users' behavioural patterns, allowing for additional advancements in home automation. Numerous smart home gadgets are designed to monitor not just electrical equipment, but also people's everyday activities and health. For instance, such devices may conduct health monitoring functions such as continuously measuring blood pressure and communicating data to a doctor if a health problem is discovered. Due of the tremendous market potential for IoT-based smart homes, more firms are striving to join the space.

We propose and assess an unique review method in this work. Before a transaction happens, the proposed system verifies the quality of data transferred in the P2P data marketplace and the reputation of the data seller.

USE OF IOT IN MARKET

Information is a strategic asset in contemporary society that may help ensure and retain competitiveness. A business might gain from increased product development or service provision based on a significant volume of data. Particularly, usage log data are critical for businesses whose primary product is an IoT device, as these businesses use log data generated by devices to create a statistical representation of user behaviour with the goal of identifying a product's flaws or complementing existing products with new ones. Numerous research have referred to the paradigm of IoT data sharing as sensing as a service (S2aaS).

Previously, organisations could upload raw IoT data gathered from users or data brokers to a cloud server. This, however, has raised severe worries about user privacy. As a result, the data marketplace arose as a platform for facilitating transparent data exchanges between users of IoT devices and manufacturers of IoT devices. A typical data marketplace's members are generally separated into data consumers and data sellers. Data sellers sell their data for commercial gain or to establish trust, while data consumers acquire and utilise this data. If required, a data intermediary capable of processing IoT log data in order to generate secondary processed data may exist. Thus, individuals who own and sell data become users of IoT devices, while those who consume data become data producers. As a result, data owners are motivated to sell user-generated device data in the marketplace, and data consumers may purchase high-quality data that meets their specifications.

BLOCKCHAIN AND IOT

Since the inception of Bitcoin in 2008, the blockchain technology upon which it is founded has been a hot issue. In a nutshell, a blockchain is a distributed database. A miner node collects data units called transactions and combines them with other transactions to form a block. As with a chain, a cryptographic hash function is employed to connect the current block to the preceding one. The blockchain is sometimes referred to as a public ledger since all transactions and blocks on the chain are viewable to network nodes. Additionally, the blockchain utilises a peer-to-peer network that operates independently of a third trusted entity or a centralised server, which may be a SPOF. This public ledger is replicated on many nodes around the network. If a malicious node wishes to modify the data contained in the ledger, it must modify the data contained in each node's public ledger copy. Additionally, when the data in a block is modified, the chain structure modifies the block's hash value, which affects the hash values of the child blocks linked to the modified block. As a result, any modification to the blocks may be noticed quickly by all nodes. Thus, the blockchain system protects the data's integrity, consistency, and transparency. On a peer-to-peer network, when there is no trust between peers, a consensus method is necessary to address a variety of critical concerns, such as block generating authority. Blockchain research to broaden the scope of blockchain applications beyond cryptocurrencies is underway, and the technology is widely recognised as the main technology of the fourth industrial revolution.

CONLUSION

It is hardly hyperbole to assert that human civilization has evolved as a result of computers. Since the 1960s, when MIT made the first effort to link clothes and computers, other researchers and corporations have worked to link everyday objects with tiny computers and networks. Specifically, IoT technology is fast growing and is being implemented in a variety of industries, including smart cities and smart homes, to enable people to live comfortably. Among them, the term "smart home" refers to an Internet of Things environment in which gadgets within the house may connect with occupants' cellphones to relay status information or operate gadgets . Additionally, smart homes have the benefit of being readily accessible to individuals of all ages, in comparison to other sectors. The investment and development opportunities are so compelling that many Internet of Things device manufacturers spend much in technology and product development to create a more inventive smart home. However, the data acquired by many users through IoT devices is essential to create goods and technology. After evaluating the massive volume of log data generated by different users of IoT devices, it is feasible to determine the goods' limitations or to design new goods with expanded capabilities. Companies' drive for IoT development has led in the creation of a beneficial IoT data exchange platform.

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