Blockchain federated learning for in-home health monitoring

ABSTRACT

This research combines two emerging technologies, the IoT and blockchain, and investigates their potential and use in the healthcare sector. In healthcare, IoT technology can be utilized for purposes such as remotely monitoring patients' health. This paper details ongoing research towards individualized health monitoring using wearable gadgets. The goal of improving healthcare facilities and improvement of the quality of life of citizens naturally brings up Internet of Things (IoT) technologies for consideration. Health observation is exceptionally critical in terms of avoidance, especially since the early determination of illnesses can minimize trouble and treatment costs. The cornerstones of intelligent, integrated, and individualized healthcare are continuous monitoring of physical signs and evaluation of medical data. To build a more reliable and robust IoMT model, the study will monitor the application of blockchain technology in federated learning (FL). A viable way to address the heterogeneity problem in federated learning is to design the system, data, and model tiers to lessen heterogeneity and produce a high-quality, tailored model for each endpoint. Blockchain-based federated learning allows for smarter simulations, lower latency, and lower power consumption while maintaining privacy at the same time. This solution provides another immediate benefit: in addition to having a shared model upgrade, the updated model on phones will now be used automatically, giving personalized knowledge about the phone is used.