

Abstract

Recently, placing vehicle in the parking area is becoming a problem. A smart parking system is proposed to solve the problem. Most smart parking systems have a centralized system, wherein that type of system is at-risk of single-point failure that can affect the whole system. To overcome the weakness of the centralized system, the most popular mechanism that researchers proposed is blockchain. If there is no mechanism implemented in the blockchain to verify the authenticity of every transaction, then the system is not secure against impersonation attacks. This study combines blockchain mechanism with Ring Learning With Errors (RLWE) based digital signature for securing the scheme against impersonation and double-spending attacks. RLWE was first proposed by Lyubashevsky et al. This scheme is a development from the previous scheme Learning with Error or LWE.

Keywords: Smart Parking System; Blockchain; Digital Signature; Ring LWE;