Technical Writing and Seminar Laboratory (CSE 4120)

Name: Pantho Haque

Roll: 1907075

4th year

1st semester

Title: A New Blockchain-based Electronic Medical Record Transferring System with Data Privacy

Summary: Designs a new data anonymization privacy protection method and deploys it in a blockchain based medical prescription system. To achieve privacy protection noise has been added using a mechanism called Laplace mechanism. Data anonymization is designed using the scheme named K-anonymity algorithm which prevents external users from obtaining medical information through exchange and sharing.

Title: AI and Blockchain-based Secure Message Exchange Framework for Medical Internet of Things

Summary: AI enabled and IPFS based blockchain network to offer the security of medical IoT data. Different ML classifiers have been used to classify an attack data (1) or normal data (0). Among them KNN achieved the highest accuracy (95.4%) with less training time and high AUC on ROC curve. IPFS has been used for security, transparency, authentication, confidentiality, and privacy. Some user defined functions have been introduced such as addDevice(), removeDevice() etc. Blockchain only stores the hash of IoMT data. Performance can be enhanced by replacing the public blockchain with the private blockchain. Hyperledger fabric creates permissioned blockchain infrastructure to confront and manage security vulnerabilities.

Title: Decentralized Medical Healthcare Record Management System Using Blockchain

Summary: A solution to keep the patient's medical information safe. Created using Typescript and Next UI, where patients can interact with multiple doctors. The uploaded document by the user will be stored in IPFS and returns a unique hash which is called CID (content identifier). CID will be stored in blockchain as private variable. A framework built on Ethereum Blockchain which allows users to manage their own medical information and preserve their privacy while he has a MetaMask account and crypto. Transferring crypto may cause a financial loss. It is implemented on Ethereum-Ropsten-Test net. Used Ganache to carry out transactions which provides 10 accounts with fake ethers, and they are used for development and testing projects.