

Blockchain for Secure, Distributed and Shareable Medical Records

Background

Not all healthcare providers provide medical records about their patients which can be easily shared with and accessed by other healthcare providers, nor are medical records always transparent and accessible for the patient it concerns. In particular, different providers may expose different parts of the medical records towards the patient.

In efforts to make medical records more easily shared between different healthcare providers and more transparent towards patients, while still keeping the data secure and reliable, several companies have started to utilize blockchain technology to implement various distributed and scalable systems for storing medical records.

Project description

This project is about sensible data storage and management in a distributed setting. The aim of the project is to implement a minimal viable application for creating, storing and sharing medical records between authenticated healthcare providers and patients. The aim is to provide a highly secure and scalable distributed system, guaranteeing correctness and transparency of the stored data, using blockchain technology.

The goal of the research is to investigate how blockchains may be used to securely share and store sensible data in a distributed setting. The main focus is therefore blockchain technology, originating from the fields of data structures and cryptography.

Suggested reading/viewing material

<https://bitcoin.org/bitcoin.pdf>

<http://jrxv.net/x/16/blockchain-gentle-introduction.pdf>

<https://builtin.com/blockchain/blockchain-healthcare-applications-companies>

<https://www.youtube.com/watch?v=bBC-nXj3Ng4&list=PLG7STyO6xNpzZq-bQU4eCOZHCAIFPybcN&index=2>

Target group

DV, D, IT

Prerequisites

Knowledge and interest, preferably even courses, in:

- 1) Data Structures,
- 2) Cryptography,
- 3) Databases
- 4) Object-oriented programming

A general interest in blockchain technology is also good to have.

Proposal authors

Hampus Jernkrook, DV

David Zamanian, DV

Supervisor

N/A.