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IIT Madras develops blockchain-based medical data system for mobile app

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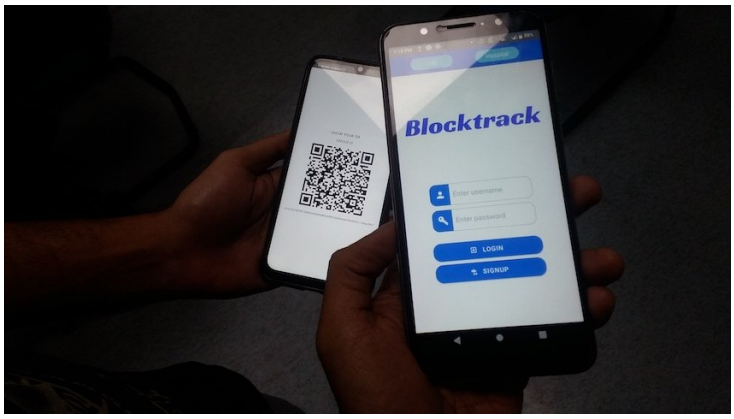

Indian Institute of Technology (IIT) Madras researchers have developed 'BlockTrack', a first-of-its-kind blockchain-based secure medical data and information exchange system for a mobile phone-based application. This system is currently being field-tested at IIT Madras Institute Hospital.

The project has been undertaken with CSR support from Infosys originating during the height of the COVID-19 pandemic last year. BlockTrack aims to securely digitise healthcare information systems while ensuring the protection of sensitive personal information and medical records by decentralising the control and ownership of patient data, through a blockchain-based innovation. The BlockTrack innovation is now protected through a provisional IP filed with the Indian Patent Office.

The Android version of the application has been developed separately for both patients as well as doctors. BlockTrack's algorithm generates identification codes for users and ensures uniqueness across boundaries with very little chance for duplication. It opens up the promise of universal and transferable healthcare information management with a strong emphasis on data privacy and tracking the spread of infectious diseases across geographies.

BlockTrack allows the interoperability of systems from multiple hospitals, institutes, and healthcare organisations. It integrates medical supply chain management and proactive tracking of the spread of contagious infections. The patient can choose to visit any healthcare facility which is on BlockTrack's blockchain network without having any concerns about duplication of records or re-registrations.

BlockTrack is developed by a team led by Prof Prabhu Rajagopal, Lead Faculty, Remote Diagnostics, Center for Nondestructive Evaluation (CNDE), Department of Mechanical Engineering, IIT Madras.

Prof Rajagopal said, "BlockTrack is an exciting project that depicts engineering innovations that have disruptive potential to transform multiple domains."

Prof K VijayRaghavan, Principal Scientific Adviser, Government of India, said, "This will enhance and enable the efforts of health systems to efficiently track disease spread and maintain confidentiality while storing personal data in a network."

Dr Rebecca Punithavalli, Chief Medical Officer, IIT Madras Institute Hospital, who had supported pilot trials, said, “Technology in the medical field is required at all levels. BlockTrack will truly solve the purpose as technological assistance in time of need.”

Shashwat Pandey, Mobile App Development Lead, added, “We are glad that our efforts have finally resulted in possibly the first-ever Healthcare centric DApp (Decentralised Application) with features like universally unique IDs, interoperability and non-duplicity of records.”