

NFT-Based User Authentication Scheme for Mobile Apps*

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Abstract

User authentication is a process that was evaluated through the years, but still focused on providing authentication data – in most cases username and password. That approach forces users to remember many complicated passwords, which results in reusing them for many services. The solution that was made to solve that problem was password management software, but it is usually paid and, in some cases, vulnerable to loss of that software authentication data. Another proposed solution is to sign in using external service providers – e.g., Google or Facebook. In that case service provider is dependent on third-party infrastructure and at any time can be disabled. In our paper, we propose a scheme that uses NFT as an authentication token, stored in a decentralized way on the blockchain. This approach removes limitations mentioned before, also providing users an easy way of transferring access credentials.

Keywords: NFT, ERC-721, authentication, cryptography, web3