**LITERATURE SURVEY**

# TITLE: Cred Chain: Academic and Professional Certificate Verification System using Blockchain

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**ABSTRACT:** The integrity of academic and professional creden-tials is a foundation in education and the professional fields. Traditional certificate verification methods are flawed by in-efficiencies, susceptibility to fraud, and a reliance on manual processes that compromise security and expedience. To address these issues, we present CredChain, a robust Academic and Professional Certificate Verification System that harnesses the power of blockchain technology. Our system utilizes Ethereum-based Decentralized Applications (DApps) and Smart Contracts integrated with the InterPlanetary File System (IPFS) to ensure immutable, secure, and transparent verification processes. We outline the novel algorithms for essential system functions such as certificate uploading, verification, and retrieval of certificates. The CredChain system has been subjected to rigorous testing and validation, demonstrating its effectiveness in mitigating the risk of fraudulent certificates and streamlining the verification process accurately.

# TITLE: Trustworthy Healthcare Professional Credential Verification Using Blockchain Technology

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**ABSTRACT:** Healthcare credentialing plays a vital role in ensuring the competence and integrity of healthcare professionals. However, the current credentials verification process suffers from time-consuming procedures due to the large number of intermediaries, limited information access, data fragmentation and the persistent risk of fraudulent credentials, leading to delayed hiring, increased administrative burden, and loss of trust and reputation in the healthcare system. In this paper, we utilize blockchain technology to enhance the credentialing process by streamlining the verification steps, improving data security, and providing stakeholders with confidence through secure storage of credentials. In addition, we utilize advanced security techniques, such as proxy re-encryption and cryptographic algorithms, to ensure the protection of sensitive data, facilitate secure communication, and prevent unauthorized access. We develop smart contracts which eliminate the need for intermediaries, automate the verification process, and enhance transparency and data integrity. We present system architecture, sequence diagrams, entity relationship diagrams, and the underlying algorithms of our blockchain-based solution. We discuss how our proposed solution attains the objectives outlined in the paper. We conduct cost evaluation and security analysis to validate the effectiveness of our solution. Additionally, we compare our proposed system with existing blockchain-based solutions, highlighting its novelty. The code of our smart contracts is made publicly available on GitHub.

# TITLE: Blockchain Based Certificate Verification for Employee Hiring & Admission System

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**ABSTRACT:** Students earn a variety of academic qualifications throughout their academic careers. The student offers their academic credentials while submitting an application for a job or scholarship. In light of the fact that cryptocurrencies are prohibited in academia, the purpose of this article is to put forth a hypothetical blockchain-based certificate verification system that runs on the cloud. In this paper, we analyze the application of Block-chain technology to address these problems. Immutability and publicly verifiable transactions may be provided by this blockchain. Additionally, these blockchain characteristics are combined to create a digital academic certificate that is easy to verify quickly and is anti-counterfeit. Furthermore, the planned "Blockchain-based Certificate Verification" demonstrated how a nation that forbade cryptocurrencies could use blockchain technology.

# TITLE: Skill Check: An Incentive-based Certification System using Blockchains

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**ABSTRACT:** Skill verification is a central problem in workforce hiring. Companies and academia often face the difficulty of ascertaining the skills of an applicant since the certifications of the skills claimed by a candidate are generally not immediately verifiable and costly to test. Blockchains have been proposed in the literature for skill verification and tamper-proof information storage in a decentralized manner. However, most of these approaches deal with storing the certificates issued by traditional universities on the blockchain. Among the few techniques that consider the certification procedure itself, questions like (a) scalability with limited staff, (b) uniformity of grades over multiple evaluators, or (c) honest effort extraction from the evaluators are usually not addressed. We propose a blockchain-based platform named SkillCheck, which considers the questions above, and ensure several desirable properties. The platform incentivizes effort in grading via payments with tokens which it generates from the payments of the users of the platform, e.g., the recruiters and test takers. We provide a detailed description of the design of the platform along with the provable properties of the algorithm.

# TITLE: Blockchain Powered Skill Verification System

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**ABSTRACT:** A skill verification system is the process of checking and verifying the skill legitimacy of a graduate student or an experienced employee. To maintain an objective, effective, transparent, and secure environment, these methods are necessary. Blockchain, a distributed digital ledger-based technology, can make it easier to implement these criteria successfully [1]. One of the most fundamental yet crucial tasks for every company is the verification of the candidate’s qualifications and experience before hiring. In order to understand the present status of information technology usage in the field of human resource management and how Blockchain might help achieve smart, affordable, efficient, transparent, and secure factory management, a thorough literature research was undertaken. With an increasing number of applying candidates especially in larger firms, verifying candidate qualifications and experience is becoming very time-consuming, and as a result is overlooked many times. This problem of candidates falsifying their information is an increasing concern for the HR department and while conventional skill verification systems are useful, they are still far from perfect to handle this system [3].