BLKN 490B SPECIAL TOPIC: Cryptographic Hash Functions

MICROCREDENTIAL AWARDED TO

Kgomotso Tebogo Keloneilwe

ALTHASH UNIVERSITY

Specific Learning Objectives:
Define and explain the properties of cryptographic hash functions (Knowledge). Apply number theory, modular arithmetic, and finite fields to the study of hash functions (Application). Evaluate the security properties of popular cryptographic hash functions (Evaluation). Investigate the role of hash functions in digital signatures and password storage (Analysis). Design and implement a secure authentication system using cryptographic hash functions (Synthesis). Explain the role of hash functions in blockchain technology and cryptocurrency (Knowledge). Analyze the impact of cryptographic hash functions on the security and scalability of blockchain systems (Analysis). Identify potential attacks and vulnerabilities in cryptographic hash functions (Analysis). Assess the performance and security margins of different hash functions (Evaluation). Examine the implications of quantum computing on cryptographic hash functions (Analysis). Investigate hardware and parallelization optimizations for hash functions (Analysis).

In partial fulfillment of the requirements for the nanodegree of

Blockchain Studies (CSC - BSTUD)

(4.5 Clock Hours) (80% Passing Score)

11 Jul 2024

Verification ID: **669093adfa59d0c5f404ca33**

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