

# GenuineGrads: Blockchain-Based Academic Credential Verification

Using NFTs & Zero-Knowledge Proofs



Learn How Blockchain Works!

Block #1

Previous Hash: 00000000000000000000000000000000  
Hash: 00022a892a4844a2f540b25746649bc17db755749f90325fc7d49c55f5f40d1  
Nonce: 9738

## Background 🔗

- Traditional academic certificates are easy to forge and difficult to verify.
- Employers spend weeks validating credentials.
- Privacy concerns exist when sharing full records (transcript).
- No standardized verification system in Sri Lanka.
- Centralized databases are vulnerable to hacks.



Block #2

Previous Hash: 00022a892a4844a2f540b25746649bc17db755749f90325fc7d49c55f5f40d1  
Hash: 0002088289dfeff4157053530c0442665a8384863bd72dbb0db683c79805dde4  
Nonce: 6039

## Objectives ⚽

- Use NFTs for tamper-proof digital certificates.
- Enable Zero-Knowledge Proofs allow proof of achievement without exposing sensitive academic details.
- Instant & trustless verification via blockchain.
- Ensure student ownership of credentials.



Block #4

Previous Hash: 000f317e9c93bc3adcf6673447340ce2468bb2bdfe65fa4b6e482eafb6fd5949  
Hash: 000d88dfb6c46a4d346f235a8e3cf60815a4b319964938d0efbf692d92119ca5  
Nonce: 11646

## Technology Stack 🛠

- Solana Blockchain: Secure, scalable, & fast.
- Metaplex NFT Standard: Tamper-proof credentials.
- ZKP (Circom/Halo2): Privacy-preserving proofs.
- GraphQL API: Efficient certificate queries.
- React.js & Tailwind CS: User-friendly web platform.



Block #3

Previous Hash: 0002088289dfeff4157053530c0442665a8384863bd72dbb0db683c79805dde4  
Hash: 000f317e9c93bc3adcf6673447340ce2468bb2bdfe65fa4b6e482eafb6fd5949  
Nonce: 4006

## Stakeholders & Requirements 💬

- Universities: Issue NFT-based academic degrees.
- Employers: Instantly verify credentials.
- Students: Own, store & share credentials.
- Govt & Institutions: Support nationwide adoption.

Block #5

Previous Hash: 000d88dfb6c46a4d346f235a8e3cf60815a4b319964938d0efbf692d92119ca5  
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Nonce: 5942

## Aligning with Sri Lanka's Digitalization Initiative 🎉

- The Sri Lankan government has allocated LKR 3 billion for public sector digitalization.
- GenuineGrads aligns with Sri Lanka's blockchain push for trustworthy digital credentials.
- Supports digital public sector transformation.
- GenuineGrads aligns with SL's 2025 strategy.

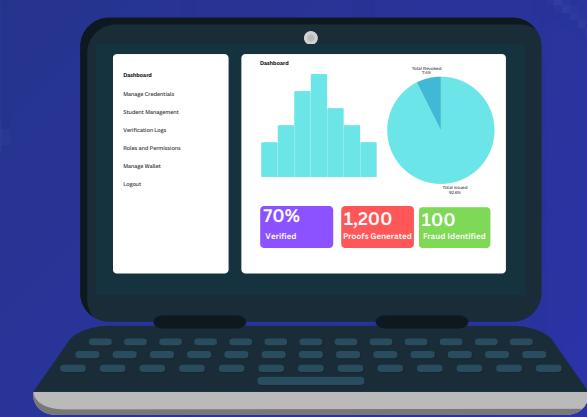


Block #7

Previous Hash: 000662862baa6312007f4c170fc40b3b8b6d6e0c347212110d0aefb6bc3cad4e  
Hash: 000252975e7aacf5e48e22198bae3842ced35a28a28df60d9c21f29c7cfa78d5  
Nonce: 5961

## UI Mockup 🖥

University Issuance Dashboard



Block #6

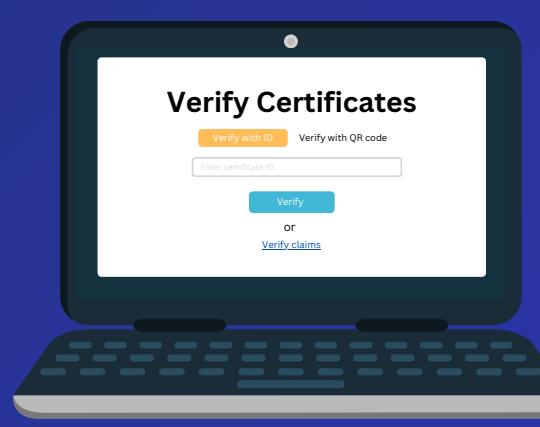
Previous Hash: 000eb593484c8e309b6bb1e3f288f0695f31efdd4fb64a3c1306fe695060aa4b  
Hash: 000662862baa6312007f4c170fc40b3b8b6d6e0c347212110d0aefb6bc3cad4e  
Nonce: 1936

## Conclusion & Impact 🌟

- Eliminates certificate fraud permanently.
- Enables privacy-focused academic verification.
- Makes degree validation instant & global.
- Strengthens Sri Lanka's digital transformation.



Employer Verification Dashboard



Student Dashboard

