Literature Scan

1. **"Blockchain and NFTs in the Cultural Heritage Domain: A Review of Current Research Topics"**
   This paper reviews studies from 2017 to 2022 on how blockchain has been used in cultural heritage. It focuses on applications such as provenance tracking, authenticity, and digital archiving. The authors also point out issues like scalability and storage limitations that affect current systems (Stublić, Bilogrivić, & Zlodi, 2023).

2. **"Blockchain in Cultural Heritage: Insights from Literature Review" (MDPI / Sustainability)**
   Vacchio and Bifulco (2022) identify three main use cases of blockchain in heritage: provenance and authenticity, tokenization and fractional ownership, and rights management. They emphasize that blockchain can re-establish transparency and verifiability in cultural assets but that institutional adoption is still limited.

3. **"HeriLedger – A New Generation of Blockchains for Cultural Heritage"**
   Trček (2022) introduces *HeriLedger*, a blockchain designed specifically for heritage preservation. It focuses on energy efficiency and easier integration with IoT and mobile systems, addressing the technical limitations of general-purpose blockchains when used for cultural preservation.

4. **"Digitalization of Cultural Heritage Through Blockchain"**
   Ilmi et al. (2025) discuss blockchain's role in supporting the digital tourism industry by improving data integrity, authenticity, and sharing across cultural institutions. They note that while blockchain helps manage assets and copyrights, many institutions still face challenges with interoperability and adoption.

5. **"Cultural heritage preservation by using blockchain technologies"**
   In another work, Trček (2022) presents a blockchain-based architecture for preserving cultural heritage data. The study highlights how distributed ledgers can protect data integrity and ensure long-term access while balancing sustainability and archival reliability.

6. **"Strategizing blockchain adoption in public cultural services"**
   Rubino, Agostino, and Spallazzo (2025) examine how public cultural institutions approach blockchain adoption. They find that while blockchain improves transparency and accountability, implementation is still at an early stage and depends on clear governance strategies and policy support.

Synthesis & Gap:

Across the reviewed studies, blockchain is consistently seen as a tool that can improve how cultural heritage is documented and verified. Most research agrees that it strengthens authenticity, provenance, and transparency, but the actual systems are still experimental and often tested in controlled or institutional settings. A common limitation is that many projects depend on one organization or validator, which reduces decentralization and community participation. There is also very little work focused on local or Gulf-based heritage use cases. Athar builds on these ideas by focusing on a smaller, practical pilot for tangible Sadu artifacts. It introduces a multi-attester model and a simple licensing process to show how blockchain can be applied in a realistic, community-centered way within Qatar's cultural context.

References

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