



Commit and Reveal Subphases



Nesa's decentralized inference framework is composed of several core components: users who submit inference requests, chain contracts responsible for verification and aggregation of results, and nodes that process these requests.

Two Distinct Subphases: Commit and Reveal

In the first phase, Inference Request Queueing, a user submits an inference request transaction, which includes the necessary details for the inference task but does not trigger the execution immediately. Instead, this transaction is registered into a queue within the blockchain, prioritized based on fee paid.

The second phase, Inference Execution and Response, is initiated once the inference request reaches the front of the queue. Separate transactions are created by the designated inference committee, which is tasked with actually performing the inference task. Upon completion, the results are recorded and disclosed.

This framework leverages a two-phase transaction structure, utilizing the commit-reveal paradigm, to safeguard against dishonest behavior and free-riding.

The separation of request and execution transactions offers several advantages. Firstly, it avoids the congestion that can occur when the blockchain waits for computationally intensive inferences to complete. Secondly, it provides flexibility in resource allocation, as the inference task can be processed in parallel with other blockchain operations. Finally, it ensures that the blockchain maintains a consistent and fast block generation time, regardless of the complexity or size of the AI models being inferred.



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