

CLAIMS

1. A computer-implemented method, comprising:
 - receiving a first non-fungible token transaction request;
 - obtaining a network congestion metric regarding a congestion measure of a blockchain network;
 - determining that the network congestion metric is above a first threshold level; and
 - responsive to determining that the network congestion metric is above the first threshold level,
 - queuing the first non-fungible token transaction request in a queue until detecting a queue trigger, the queue trigger including determining that the network congestion metric has fallen below a second threshold level;
 - in response, generating and propagating a batch blockchain transaction on the blockchain network that implements two or more queued non-fungible token transaction requests including the first non-fungible token transaction request and at least one additional non-fungible token transaction request; and
 - after the non-fungible token transaction requests in the queue have been processed in the batch blockchain transaction, clearing the queue and awaiting receipt of a new non-fungible token transaction request.
2. The method of claim 1, wherein the at least one additional non-fungible token transaction request is received after the first non-fungible token transaction request and is appended to the queue containing the first non-fungible token transaction request.
3. The method of claim 1, wherein the network congestion metric is based on one or more of: a count of unconfirmed transactions on the blockchain network, a rate of receipt of new transactions on the blockchain network, an average age of unconfirmed transactions on the blockchain network, a rate of change in number of unconfirmed transactions over a window of time, a cost measure per computing operation, or a transaction fee.
4. The method of claim 1, wherein detecting a queue trigger further includes one or more of determining that a time elapsed since receipt of the first non-fungible token transaction request has exceeded a maximum time, or determining that a count of requests in a queue matches or exceeds a maximum count.

5. The method of claim 1, wherein the second threshold level matches the first threshold level.
6. The method of claim 1, wherein queuing includes storing at least a portion of data from the first non-fungible token transaction request in memory sufficient to generate a blockchain transaction that implements the first non-fungible token transaction request.
7. The method of claim 1, wherein the batch blockchain transaction references a batch processing function and provides an updated NFT state that reflects implementation of the two or more non-fungible token transaction requests.
8. The method of claim 1, wherein the first non-fungible token transaction request is a minting request and includes a recipient address.
9. The method of claim 8, wherein the at least one additional non-fungible token transaction request is a further minting request and includes a respective recipient address.
10. The method of claim 1, wherein the queued non-fungible token transaction requests include at least one transfer request regarding a previously minted token and the at least one transfer request includes a transferee address and a digital signature.
11. The method of claim 1, further comprising, after generating and propagating the batch blockchain transaction,
 - receiving a second non-fungible token transaction request;
 - obtaining an updated network congestion metric regarding the congestion measure of the blockchain network;
 - determining that the updated network congestion metric is below the first threshold level; and
 - responsive to determining that the updated network congestion metric is below the first threshold level, generating and sending a single blockchain transaction on the blockchain network to implement the second non-fungible token transaction request alone without queueing.
12. A computing system, comprising:

a processor; and

a memory storing computer-executable instructions that, when executed by the processor, are to cause the processor to:

receive a first non-fungible token transaction request; obtain a network congestion metric regarding a congestion measure of a blockchain network;

determine that the network congestion metric is above a first threshold level; responsive to determining that the network congestion metric is above the first threshold level, queue the first non-fungible token transaction request in a queue until detecting a queue trigger, the queue trigger including determining that the network congestion metric has fallen below a second threshold level;

in response, generate and propagate a batch blockchain transaction on the blockchain network that implements two or more queued non-fungible token transaction requests including the first non-fungible token transaction request and at least one additional non-fungible token transaction request; and

after the non-fungible token transaction requests in the queue have been processed in the batch blockchain transaction, clear the queue and await receipt of a new non-fungible token transaction request.

13. The computing system of claim 12, wherein the at least one additional non-fungible token transaction request is received after the first non-fungible token transaction request and is appended to the queue containing the first non-fungible token transaction request.
14. The computing system of claim 12, wherein the network congestion metric is based on one or more of: a count of unconfirmed transactions on the blockchain network, a rate of receipt of new transactions on the blockchain network, an average age of unconfirmed transactions on the blockchain network, a rate of change in number of unconfirmed transactions over a window of time, a cost measure per computing operation, or a transaction fee.
15. The computing system of claim 12, wherein the instructions, when executed by the processor, are to cause the processor to further detect a queue trigger by one or more of determining that a time elapsed since receipt of the first non-fungible token transaction request has exceeded a maximum time, or determining that a count of requests in a queue matches or exceeds a maximum count.

16. The computing system of claim 12, wherein the second threshold level matches the first threshold level.
17. The computing system of claim 12, wherein the instructions, when executed by the processor, are to cause the processor to queue by storing at least a portion of data from the first non-fungible token transaction request in the memory sufficient to generate a blockchain transaction that implements the first non-fungible token transaction request.
18. The computing system of claim 12, wherein the batch blockchain transaction references a batch processing function and provides an updated NFT state that reflects implementation of the two or more non-fungible token transaction requests.
19. The computing system of claim 12, wherein the instructions, when executed by the processor, are to further cause the processor to, after generating and propagating the batch blockchain transaction,
 - receive a second non-fungible token transaction request; obtain an updated network congestion metric regarding the congestion measure of the blockchain network;
 - determine that the updated network congestion metric is below the first threshold level; and
 - responsive to determining that the updated network congestion metric is below the first threshold level, generate and send a single blockchain transaction on the blockchain network to implement the second non-fungible token transaction request alone without queueing.
20. A non-transitory, computer-readable medium storing computer-executable instructions that, when executed by a processor, are to cause the processor to:
 - receive a first non-fungible token transaction request; obtain a network congestion metric regarding a congestion measure of a blockchain network;
 - determine that the network congestion metric is above a first threshold level;
 - responsive to determining that the network congestion metric is above the first threshold level, queue the first non-fungible token transaction request in a queue until detecting a queue trigger, the queue trigger including determining that the network congestion metric has fallen below a second threshold level;

in response, generate and propagate a batch blockchain transaction on the blockchain network that implements two or more queued non-fungible token transaction requests including the first non-fungible token transaction request and at least one additional non-fungible token transaction request; and

after the non-fungible token transaction requests in the queue have been processed in the batch blockchain transaction, clear the queue and await receipt of a new non-fungible token transaction request.