1. High-level description and rationale for the AI algorithms/models that will be used

Proof of Vision Tokens aims to allow miners to use AI models in the realm of computer vision to process and analyze large datasets of images. The choice of AI model(s) will be driven by the specific tasks required by the image data suppliers, which may include image classification, object detection, segmentation, and potentially more complex analyses such as pattern recognition and predictive modeling.

Deep learning models like Convolutional Neural Networks (CNNs) are a natural choice for these tasks due to their performance in image understanding and pattern extraction. CNNs are especially good at discovering features from images, making them ideal for classifying images. Other models, such as Recurrent Neural Networks (RNNs) or Transformers, could be utilized depending on the specific task that the supplier wishes to have done.

The rationale behind using these models includes:

Accuracy: Deep learning models, particularly CNNs, have high accuracy in image classification and analysis. Image suppliers can rely on these models for the quality and reliability of their output.

Consensus and Trust: In a decentralized system where multiple miners work on the same classification task, consensus algorithms can be employed to ensure that the final output reflects the most accurate result. For instance, models' predictions can be aggregated, and through our consensus mechanism, with the most commonly occurring output determined to be the final result.

Scalability: As the system grows to accommodate more users and data, AI models can be trained incrementally or in a distributed fashion, maintaining the system's performance and scalability. This way, if the image/model supplier chooses, they can decentrally train a model to be used in the future.

The integration of CNNs or other AI models is fundamental to image suppliers correctly having their images classified.

2. High-level description and rationale for the blockchain architecture that will be used

Proof of Vision tokens require blockchain to be successful and secure. The smart contract component is responsible for dealing with the interactions between image suppliers, miners, and investors.

The smart contract first receives the request from the supplier. The supplier provides the smart contract with an ethereum bid, as well as a link to the images and model which are both hosted off-chain. Then, it sends these images and model(s) to the workers who then do their image classification also off chain.

The smart contract and blockchain come back into play after the pipeline has come to a consensus. The pipeline sends the request after consensus is reached with the now labeled images and their labels. These are then sent back to the supplier. Also at this time, new coins are minted and sent to the workers who correctly labeled the images (agreed with consensus).

The last involvement of the blockchain and smart contract is the payment of dividends to people who hold the Proof of Vision Token.

All of these functions would not be able to be done decentrally without using a blockchain and smart contracts.