This paper proposes a completely novel incentive method for federated crowdsourcing, which introduces a time control mechanism to ensure the quality of worker submissions and can simultaneously achieve the global optimization of the utilities of the requester (server side) and workers (client side) in the game.

Why should this contribution be considered important for the field of Artificial Intelligence? Please confirm where you explain this in the paper?

1) Federated learning using crowdsourcing platforms is a new form of learning. It is an effective privacy-preserving learning paradigm from data collection, and local model training, to global model integration, which has a very wide range of applicability. Existing incentive mechanisms for federated learning do not consider the characteristics of crowdsourcing, such as workers providing low-quality data/local models, workers delaying submission, etc. This paper provides a novel general scheme for the incentive mechanism of federated learning in the crowdsourcing environment. Thus, our work is important for the field of AI. 2) We have presented the importance of our work in the field of AI extensively in the introduction section. In the third paragraph of the introduction, we stated the importance of federated crowdsourcing. In the fourth paragraph of the introduction, we stated why our work is important to federated crowdsourcing. In the fifth paragraph of the introduction, we clearly outlined our contribution and emphasized its importance.

1. Is your work relevant to AI, and where do you explain the relevance to AI in the paper?

2. Can you confirm that at least the abstract, introduction and conclusion can be appreciated by a general AI audience?

1. Yes, our work is relevant to AI. In the introduction section, we stated our work is relevant to federated learning in crowdsourcing environment, which is obviously in the AI field.

2. Yes, our work is a general solution for the incentive mechanism of federated learning in the crowdsourcing environment, which can attract a broad attention in the related field.

The most closely related work with this paper is Kang et al. (2022). The differences between our work and theirs are mainly reflected in the following four points:

(1) We have different purposes. Kang et al. (2022) aim to encourage workers to collect fresh data constantly. While our work aims to obtain a more accurate global model at a lower cost.

(2) We have a high demand for accuracy. We only allocate rewards based on the accuracy level of the model submitted by the client within the specified time. Besides, We are not overly concerned with the freshness of the data collected by clients and the speed with which they can complete their tasks. However, we allow the data/model requester to control the freshness of the data and the completion time of the entire crowdsourcing project within their own acceptable range as needed.

(3) We avoid clients who submit low-quality models/data in exchange for quick rewards. While Kang et al. (2022) can actually lead to this situation.

Kang et al. (2022): Kang, X., Yu, G., Wang, J., Guo, W., Domeniconi, C. and Zhang, J., 2023, June. Incentive-boosted Federated Crowdsourcing. In Proceedings of the AAAI Conference on Artificial Intelligence (Vol. 37, No. 5, pp. 6021-6029).