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After reading the description below, if you still need to know more about this assignment, please, contact Dr. Mohammed Elhadj through the email below:

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IMPORTANT: Once you reach an agreement with your supervisor, contact the track chair Leon de Vries (or Wallace Corbo Ugolino) to register your option and block this assignment for you (and avoid other students wasting their time inquiring about the same assignment). We use a FIFO (first-in, first-out) approach: the first student that communicates their option to us will get the assignment. Thanks!

A few tips on how to approach your potential future supervisor (Dr. Mohammed Elhadj):

- (1) Your future supervisor may be looking for different kinds of research related to this topic. One good question you can ask your potential future supervisor is what kind of research is she/he accepting. For instance, is this a Systematic Review of Literature (SRL)? Is this an empirical research (meaning that you do some sort of trial that is linked to some sort of observation, experimental analysis, or others involving practical observation/testing)? Does it require software development? Does it require the configuration and use of existing software?
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ASSIGNMENT DESCRIPTION

Usage of Blockchain with the Milk supply chain

The FAO (Food and Agriculture Organization of the United Nations) declared June 1st to be "World Milk Day" in 2001. This event provides us with an opportunity to reflect on the importance of traceability and transparency in the dairy industry, which has been a pioneer in the implementation of blockchain technologies.

Several incidents have rocked the dairy business in recent decades. The most prominent examples, such as contaminated milk in China or salmonella-infected milk in France, have destroyed customers' trust in the industry. Furthermore, various ethical issues (producer compensation, animal welfare, etc.) are being raised, calling the current milk production model into question.

The issue for the future will be to demonstrate the commitments by the producers -to meet strict product specifications specially that there is rapid increase of organic products in stores in order to meet consumers' demands- and effectively communicate them to the consumer while drowning out the noise of the many quality labels - of which there appears to be a new one every day. Blockchain has attracted

particular attention technology for addressing these concerns, and it has positioned itself as the major solution for dairy companies trying to improve traceability and transparency.

What involvement can Blockchain perform in the Farming Sectors and to be specific in Dairy sectors?

1. Food safety: Food safety: Blockchain technology can guarantee accurate tracking of every batch in the milk supply chain. In the event of a food-borne illness, blockchain makes it extremely simple to identify the faulty link and destroy all batches that have been impacted.
2. Collaboration: Because blockchain is a distributed and decentralized ledger, it can be considered a "trusted third party." It enables all food chain participants (feed mills, producers, cooperatives, manufacturers, brands, and retailers) to securely share information, allowing them to follow a product from start to end and ensure compliance.
3. Certificates provide validation: Tangible verification of product promises and certifications (labels, external audits, etc.) will also boost trust. In this case, blockchain enables certificate verification by providing essential data to independent certifying agencies (for proof of origin, ecological footprint, animal welfare, etc.). Certifications become easier to obtain/maintain as a result, and they become more relevant to the consumer.

The objective of this project is to implement a blockchain-based traceability system by doing that the food supply chain entities may record, authenticate, and ensure the status of an individual food product, tracking its movement and quality throughout its existence. We contend that such a system can benefit all stakeholders in a food supply chain by assisting them in producing and obtaining more extensive data analysis reports.

[References]

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