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### The Implication of Artificial Intelligence (AI) in Animal Husbandry

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**Abstract:** One of the technologies, artificial intelligence (AI), requires quick adoption in the livestock sector. The use of AI technology can be highly beneficial in a number of key areas in the livestock business, including monitoring, forecasting, optimising the growth of farm animals, combating parasites, biosecurity threats, and diseases, and monitoring farm animals and farm management. Livestock farms will be helped by artificial intelligence to gather and analyse data in order to precisely forecast consumer behaviour, including purchasing patterns, leading trends, etc. Farms will be able to automate procedures, cut significant expenses, and enhance the quality of livestock byproducts like milk with increased investment.

**Keywords:** Animal Husbandry, Artificial Intelligence, Livestock farms, Technology

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### Introduction

Modern animal husbandry and aquaculture technology that incorporates artificial intelligence can automatically detect animals of various weights and developmental stages, feed them differently and increase the output rate of high-quality feeding animals. With the massive increase

in global population, farmers are switching to more intelligent methods that can help manage the proper use of land, water, and energy to feed the world and avert global food calamity. Researchers think sensors, robots, and artificial intelligence hold the key. With drones, robots, and

sophisticated monitoring systems, AI technology is now poised to transform the future of farming, which has already been successfully adopted in a number of sectors. A "smart" goat home is created using a camera and artificial intelligence (AI) as a method for accurately tracking the health of farm animals including dairy cattle. Early detection of injuries and illnesses that may have an influence on the amount and quality of milk production may be possible with AI for careful monitoring and powered picture analysis. Recent times have seen demands for increased farm animal production.

#### *Applications of Artificial Intelligence:*

##### *Diseases detection and treatment:*

AI can be used to analyse data from cameras, sensors, and other sources to detect signs of diseases in animals, and provide farming with early warning of an outbreak.

##### *Automating Feeding and Watering system:*

AI -controlled systems can monitor and adjust the amount of feed and water given to animals in real-time, ensuring optimal nutrition and hydration.

##### *Applying facial recognition to improve animal health:*

There are numerous beneficial applications, including assisting us in understanding the animal's emotional and attentional states. For instance, scientists can now reasonably predict an animal's mood and amount of enthusiasm by observing its ear and eye movements. It might assist us in controlling animal pain symptoms. Further investigation may turn up wounds, illnesses, or even signs of predator assaults.

##### *Precision livestock farming:*

Through their sensors and artificial intelligence technology, Latest Dairy is applying intelligence for the cows, the milk, and the herd. They provide sensors for anything from calving and heat detection to health monitoring, such as the Sense Time Solution sensor, which tracks a cow's daily behaviours like rumination, feeding, and walking patterns. Farmers may now monitor changes in animal movements, food intake, sleep cycles, and

even air quality in animal shelters with the use of a variety of sensors that are readily available. This sensor gives consumers early, proactive solutions to issues when combined with artificial intelligence software.

The sensor offers farmers solutions for each individual cow in addition to the capacity to capture data on reproduction, health, and nutrition.

##### *Livestock Monitoring:*

AI-powered cameras and sensors can be used to monitor the health and behaviour of animals, allowing farmers to quickly identify and address any issues.

##### *Feed and nutrition management:*

AI can be used to optimize feed and nutrition regimes for animals, taking into account factors such as weather, animal behavior, and growth rate.

##### *Automation of milking using artificial intelligence:*

AI-controlled robotic systems can be used to automate the milking process, increasing efficiency and reducing labour costs (Yongqiang, 2019).

##### *Tracking Livestock:*

The system works by implanting a tag in the animal's ear that captures its movements and the surrounding temperature in real time. In addition to gathering considerably more essential information about the health and behaviour of both individuals and groups of animals, this enables the producer to track the most recent GPS fix of their animal or mob (Matthews and Miller, 2017).

##### *Application of AI in Vaccination of Livestock:*

Modern dairy farms employ a robotic injection system to provide vaccines and reproductive medications to domestic animals on the dairy farm in order to achieve a 100% compliance rate and a viable economic future for dairy farms. These days, a robotic system is integrated with a dairy automation system. The robotic injection device

scans the RFID tags that are connected to the cow's ear to obtain data on the cow's health and immunisation history. The injection mechanism positions itself to deliver the medication in the cow's neck if it needs one, and the cow is guided to the injection location if it does (Kumari, 2021).

#### *Application of Blockchain in Food supply chain:*

Blockchain can interconnect every step in the supply chain, from the producer to the consumer, enabling food safety and traceability. From the perspective of agriculture and food, presenting this kind of proof to consumers will become a competitive advantage and might not be as difficult in the dairy sector as it is in other agricultural sectors, like cattle, where ownership changes more frequently.

#### *Predictive Breeding and Genetics:*

AI algorithms can be used to analyse genetic data and optimize the breeding program to produce animals with desired traits.

#### *Automation of Farms:*

AI-controlled robots can be used for tasks such as cleaning barns, increasing efficiency, and reducing labour costs (Neethirajan, 2020).

### **Conclusion**

We can draw the conclusion that artificial intelligence makes it simple to enter data into farm records, monitor farm activities, analyse farm performance, improve the health of farm animals, and increase soil fertility. All of these options and characteristics go toward "smart

farming." Data will be used by artificial intelligence to enhance the accuracy and precision of decisions made at all levels of the agriculture sector. Through forecasting each animal's condition, artificial intelligence has the potential to be more effective than humans at determining whether a given animal satisfies market requirements. To assist farmers to see patterns and find answers to vexing issues in contemporary animal farming, artificial intelligence, and sensing technologies will start playing a more significant role as more farms become connected to technology.

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