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ARTIFICIAL INTELLIGENCE IN BEE KEEPING

Aishi Gupta

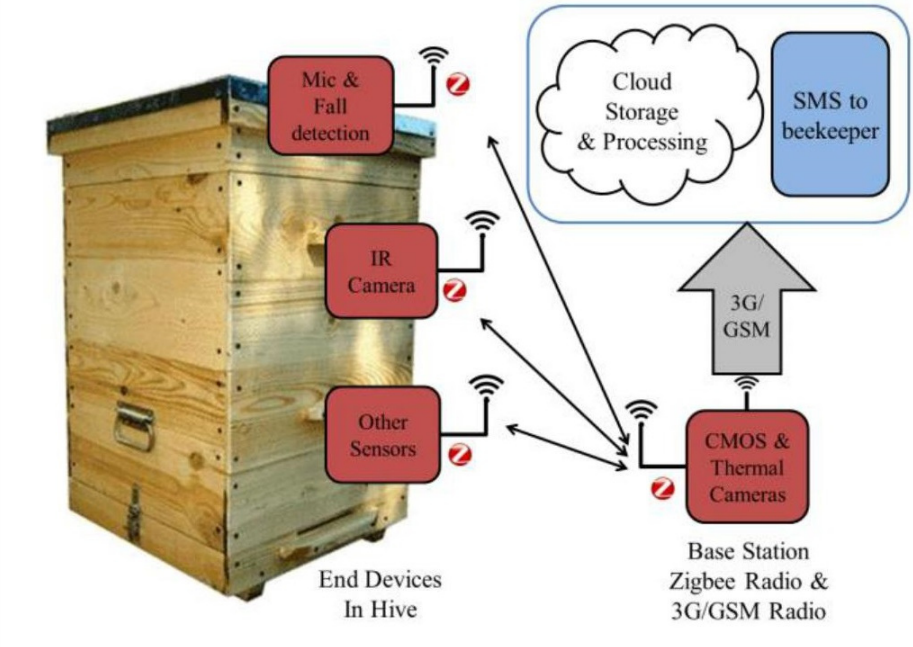
Chitkara International School
Chandigarh, India

Between 1850 and 1875, the multipurpose edge hive, the radiating honey extractor, and the ground-breaking hand-held honey bee smoker were developed. These innovations significantly advanced beekeeping technology. Advanced beekeeping relies on and will continue to rely on these fundamental developments. Currently, well over a century, in the era of the internet, advanced cells, iPads, iPods, Blue Tooth, and PCs that are being incorporated into pretty much everything, beekeeping seems to be on the verge of one more revolutionary technological leap that some belief will change the essence of beekeeping as far as we might be concerned.

Artificial Intelligence (AI) and all its related forms of computer-based intelligence are being used to solve just about every problem under the sun, but stopping the disturbing decline of the honey bee population seems like something out of a fairy tale. In fact, it is a great way to use technology, and it could help both honey bees and beekeepers keep their hives in good shape. The innovative "Smart Bee Hives" data and communication modular system lets beehives gather information in real-time and analyse, imagine, and predict what might happen in the future. After comparing how well a few different calculations worked, the most accurate future calculation is chosen. After the analysis in this study, the results show that the boosted choice tree is used more often than the other calculations used in the test.

Beewise, a agtech startup, has created the first fully autonomous beehive called Beehome that comes complete with a beekeeping robot that acts as both medic and guardian to complement the natural intelligence of bees.

From the measurements, it is clear that the accuracy of the decision tree in predicting events has gone up by 88 per cent. This high level of accuracy helps beekeepers who use the "Smart Bee Hive" framework in their apiaries in a big way. The AI system is set up by putting cameras and sensors in and around colonies of bees to gather information about the bugs' movements and the conditions in the environment, such as temperature, light, air pressure, and carbon dioxide levels. The data is then sent to a place where it can be handled and where beekeepers can access it. This makes it possible to monitor processes that lead to problems, like swarming, and with an aggregated dataset based on past observations, the system can warn beekeepers. This way, they can watch their honey bee provinces from afar and spot problems before they get out of hand.



A Smart Beehive System based on Internet of Things (IoT) technology would allow beekeepers to use their mobile phones to monitor the amount of honey produced in their hives and the number of bee colonies even when they are away from their hives. This would alleviate the current difficulties that beekeepers face and make it easier for them to manage their hives.

Beewise has raised $38.7 million in funding to date. The company expanded to California in July 2021.

The fact that AI is now being used in beekeeping has changed the business in many ways. It has helped reduce irritations and illnesses caused to honey bees, save response time, and even keep an eye on a hive from a distance when no one is there. The people who made it have tried all of these cycles and liked the results, which makes it a better way to work with honey bees. The efficiency of beekeeping is improved by new technologies and modern equipment. However, if we do not switch to natural products or farms, honey bees will die or there would not be any provisional beekeeping to pollinate farming fields, which could lead to a huge loss in crop production. Step by step, innovation is moving forward. Artificial Intelligence is getting smarter as new gadgets are added to it. Because of beekeeping, it is possible to see that the use of AI will turn this trend around in terms of methods. It will change the way people work and set new standards for the beekeeping business. It will be a different time for beekeeping, where new ideas will be the norm. Also, science will learn new things, which will further the study of honey bees, about which there are still many questions to be answered. AI could be the key to finding out about new parts of this living being that were not known before.

References:

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