Development of a Comprehensive Monitoring System for Bee Health and Behavior Analysis Using Intelligent Sound Device

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Once Einstein said that "If the bee disappeared off the face of the Earth, man would only have four years left to live." Even though beekeepers are facing problems with preserving the colony and improving the production of honey there are no methods that are helping them understand the behavior of their bee colonies. they encounter various challenges, including temperature and humidity fluctuations, which can disrupt bee activity and affect hive conditions. The presence of varroa mites, a common parasite, poses a threat to bee health, weakening colonies and reducing honey production. Moreover security concerns, like theft. BETTER BEE enhances beekeeping with advanced tech for real-time hive monitoring and varroa detection. Through the integration of advanced sensors, beekeepers gain instant access to crucial information about their hive's behavioral changes in temperature, humidity, and bee buzz frequency. This real-time data enables proactive intervention to address any issues promptly, ensuring the health and productivity of bee colonies. Additionally, BETTER BEE employs a sophisticated AI model specifically developed for varroa detection.By analyzing data collected from the integrated camera in the hive, the AI swiftly identifies signs of varroa,allowing beekeepers to take targeted action to mitigate the menace to their bees.So when a potential threat is detected, the system sends alerts to the user via the BETTER BEE mobile application, providing them with timely information to take appropriate action. With BETTER BEE, beekeepers can manage their hives with precision and efficiency, safeguarding both their livelihoods and the well-being of their bees.

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