

## **ABSTRACT**

The integration of artificial intelligence (AI) and deep learning technologies in agriculture has ushered in a new era of precision farming, where innovative solutions are developed to address various challenges. This paper presents an Animal Repellent System for Smart Farming that leverages AI and deep learning to mitigate the growing issue of animal-related crop damage. As the global population continues to expand, ensuring efficient food production is paramount, making it crucial to safeguard crops from wildlife and pests. As a result of human interference with natural habitats and deforestation, crop raiding by animals has emerged as one of the most prevalent human-animal conflicts. Wild animals can assault farmers working in the fields and seriously harm agricultural harvests. Due to agricultural raiding by wild animals like elephants, wild boar, and deer, farmers experience significant crop loss. The protection of crops against assaults by wild animals is one of the primary concerns of today's farmers. There are numerous conventional methods to deal with this issue, both lethal (such as shooting and trapping) and non-lethal (e.g., scarecrow, chemical repellents, organic substances, mesh, or electric fences). The edge computing device turns on the camera, then uses its DCNN software to identify the target. If an animal is discovered, it then sends a message to the Animal Repelling Module with information about the type of ultrasound that should be created based on the animal's category.