Future scope

* Introducing IR temperature camera.
* Upgrading wireless communication capabilities.
* Extending the communication range by using RF transceiver boards like the LORA
* Further integration of GSM to obtain real-time updates.
* At the receiver end, create a user interface that is straightforward.
* Train an AI model that can recognize the detected animal using parameters like body temperature and the pattern of the rainbow colors generated.
* Create audio frequencies that frighten that specific species.
* Wirelessly alert the owner by sending him footage of the triggered spot in real time.
* Installing solar panels will make it independent from conventional electrical sources.

**Description**

This project's main goal is to design and create a cutting-edge system that can keep wildlife out of farms and estates without endangering the animals. Our approach is to build a reliable and useful system that property owners may quickly install by utilizing widely accessible electrical components. The core of our system lies in the utilization of a RF motion detector protective barrier in combination of thermal infrared sensors. When an animal interferes with this RF system, Uther on confirmation by the thermal sensors that there's intrusion, it triggers a response that includes flashing floodlights and generate an acoustic frequency to deter the incoming animal. This combination is intended to create a startling effect, prompting the animals to retreat while alerting property owners or managers about the intrusion. The technique presents a viable substitute for traditional approaches by preventing injury to animals and reducing property damage. This is especially important in areas where these kinds of disputes are common and where people are looking for more environmentally friendly, sustainable solutions.

* The technique presents a viable substitute for traditional approaches by preventing injury to animals and reducing property damage

Our smart perimeter defense system uses innovative detection and deterrent technologies to create a 24/7 barrier against wildlife. This cost-effective solution helps farmers minimize crop losses while meeting rising food production needs. With customizable protection for any farm size and species, our system has broad applicability across the agriculture industry worldwide.

UTILITY: Our smart perimeter defense system provides 24/7 no-blind-spot intrusion detection and automated species-specific deterrents to minimize crop losses from wildlife. It is rapidly deployable to any farm size or terrain, enables affordable protection of large acreages, and provides real-time mobile alerts - uniquely safeguarding farms through versatile, customizable modular protection powered by the sun

DIFFERENTIATOR: Our solution uniquely leverages multi-modal sensory deterrents powered by off-grid solar energy for humane 24/7 protection without environmental impact. Unlike competitor lethal traps or resource intensive wired fence and lighting approaches, our mobile system preserves local wildlife while cost-effectively and sustainably maximizing farm productivity.

SCALABILITY: With $100 billion in annual crop losses globally, our perimeter defense system scales to millions of farms needing better protection. The modular, customizable design suits large commercial operations and smallholder farms alike through flexible connectivity and power options,

ECONOMIC SUSTAINBILITY: Modular components tailored to acreage, terrain and species provide scalable security. High deterrent effectiveness. Global applicability across hundreds of millions of farms the key points focus on affordability, automation reducing labor costs, strong ROI potential driving adoption, and quantifying the massive market opportunity to ensure profitable sustainability.

ENVIRONMENTAL SUSTAINABILITY: Off-grid solar power enables our system to provide crop protection without reliance on fossil fuels or the electrical grid. By deterring wildlife intrusions, food loss and unnecessary land expansion are avoided - preserving habitats and biodiversity. Weatherproof gear and non-toxic components ensure minimal ecosystem impact across diverse farm environments. Overall, multi-dimensional sustainability benefits emerge from preserving local species while maximizing efficient food production on existing lands.