ABSTRACT SUBMISSION

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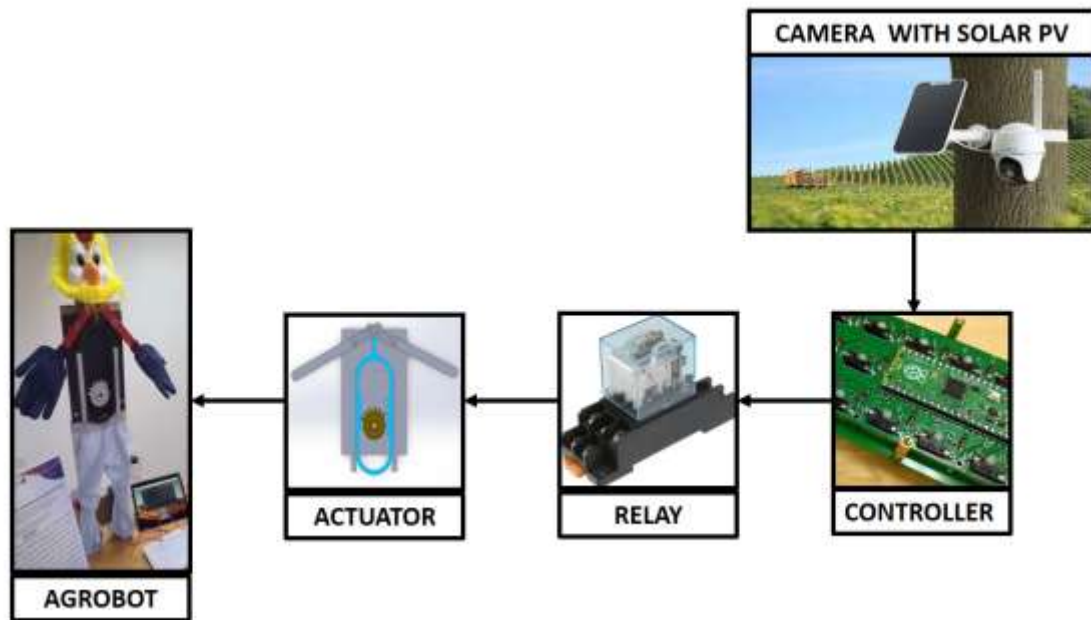EMAIL ID : sharmila.venkatachalam@utas.edu.om

TITLE:

AGROBOT: AN INNOVATIVE ARTIFICIAL INTELLIGENCE BASED SCARECROW ROBOT FOR CROP PROTECTION

THEME: THE SCIENTIFIC RESEARCH THEME: The role of innovation in achieving sustainable development goals (SDGs) in developing societies

ABSTRACT:

The main objective of our project is to design and develop an AI-based scarecrow robot to protect crops from invasive birds. A special feature of this robot is that it repels only invasive birds, not all birds. In this research work, a deep learning neural network model is developed to identify the 'farm disturbance bird'. Modified-MobileNetV2 was developed using a transfer learning approach to recognize 'farm disturbance bird' from images. Results of the proposed model indicate that it is able to recognize photo images with a good accuracy level and Real-time video images of 'farm disturbance bird' can be detected with good precision. An AI-based program is loaded into a controller with relays and a camera. Agrobot arms are activated when the AI program identifies the 'farm disturbance bird'. The proposed model is tested in a real-time environment with different distances and the results are recorded. It has been found that the robot is capable of identifying invasive birds up to 15 feet away. Ninety percent of the birds flew away from the place where the agrobot was active. A farmer can choose the 'farm disturbance bird' in the controller based on his or her experience. This agrobot assists in protecting the ecological system as it allows beneficial avian species to visit the farm. It also increases the farm's production rate by protecting it from birds that affect it.

BLOCK DIAGRAM:

AGROBOT:

JOHAINA ABDULLAH RASHID AL-KALBANI

ELECTRICAL ENGINEERING

CONTACT INFORMATION

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INTERESTE:

- Photography
- Volunteer work
- Exploration activities
- Drawing
- Experimenting with Technology.
- Learn new languages

ABOUT ME

I am a dependable graduate who holds a Diploma in Electrical Engineering. I can employ different techniques when working with electrical mechanisms, including analyzing electrical circuits.

My goal is to be in a position where I can maximize my potential as a productive and active individual, always giving a quality performance to help achieve the objectives of the organization which I serve. I am ready to work in your company and share my knowledge and abilities.

EXPERIENCE

- I participated in a project for Undergraduate Research Grants. Our project was entitled "Electrical Energy Harvested Using Gym Equipment." This project explored how to reduce carbon emissions by utilizing techniques that could potentially create sources of alternative energy.

- I also took part in a diploma project: the Design and Simulation of a Shadow Alarm. The main objective of this project was to sense a moving shadow in a confined area. Our results could be used to prevent theft.

- I am currently studying papers for a Bachelor project (Phase-1) . Also, I have a workshop to take the Electric license Insha'Allah.

EDUCATION

- UNIVERSITY OF TECHNOLOGY AND APPLIED SCIENCE,IBRI (8 / 2018 – 1 / 2023).

- GPA: 3.43

SKILLS

COMPUTER SKILLS:

MatLab

Proteus

MS Office

LANGUAGES:

Arabic

English