Abu Dhabi Polytechnic

Students' Graduation Project Abstract

Department:	AMT	**Semester:**	Spring-2022
Project Title:	DRONE-BASED BIRD-HERDING AND COLLISION AVOIDANCE		
Supervisor:	AIJAZ AHMED KHAN		

Abstract:

In today's world, many industries require an effective bird deterrent system. Many attempts have been made in the past to build an effective system, but only a few have generated good results. The purpose of this quadcopter-based project was to develop and construct a motion-detecting system that would cause the least amount of interruption while yet being capable of bird herding and collision avoidance.

The method of deterrence for the designed system was picked after an initial examination and evaluation of the present varieties of bird deterrent systems. Following the completion of the conceptual design, the mechanical, electrical, and software parts of the system were detailed and designed and partially constructed to determine the system's effectiveness.

The purpose of this project was to design and build a quadcopter with an inbuilt ultrasonic sensor (HC-SR04) that could detect bird movement as well as discover terrain ahead of the drone, allowing it to fly and hover outside. This vehicle would be capable of autonomous operation, including take-off, hover, and landing capabilities, controlled remotely by an operator and allowing them to fly the drone around the airfields and scare the birds with the falcon sound, thanks to the usage of an integrated control system.

When finished, this system will provide a foundation for a variety of detection methods that can be utilized in a variety of applications. The project was overseen via a weekly meeting schedule with the project supervisor.