HEXAPORTER : AN UNMANNED AERIAL VEHICLE WITH MECHANICAL GRIPPER FOR AERIAL TRANSPORTATION

A THESIS

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ABSTRACT

Robotic grippers have become an emerging trend due to their boundless applications in industrial automation. A gripper is a mechanism that allows you to manipulate the holding of an object. A gripper can grab, tighten, handle, and release an object. Deploying unmanned aerial vehicles, especially Hexacopter for last-mile delivery is the aim of this project. The Proposed work has the ability to autonomously carry a payload minimum of 10 kg. In this project, a robotic gripper with the ability to grab objects is attached to the drone to carry the load autonomously. With the increasing capabilities of robotic systems, their applications have been promoted from industrial areas with simple and repetitive tasks to more unknown areas with more complicated applications. The robotic gripper arm is controlled by the Digital servo motors which are used to grab the load. The gripper is configured using the Arduino boards. The hardware part of Arduino comprises Arduino boards, input and output devices (including digital and analog pins, and sensor actuators), shields, breadboards, jumper wires, and so on. The software consists of the development tools needed to write, debug, compile, and upload code to Arduino boards. Most of the software tools are available in the Arduino IDE (Integrated Development Environment).Arduino boards are programmed in C.