# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010

## PROJECT REPORT ON

# "Design of a Flight Control Board for a Quadcopter"

**Submitted in partial fulfillment of the requirements for the award of degree**

**BACHELOR OF ENGINEERING**
**IN**
**ELECTRONICS & COMMUNICATION ENGINEERING**

**Submitted By**


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**2020-2021**

# ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

**MOODBIDRI – 574 225**

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# CERTIFICATE

*'ertified that the project work entitled "***DESIGN OF A FLIGHT CONTROL BOARD FOR A )UADCOPTER***" is a bona fide work carried out by*

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n partial fulfillment for the award of BACHELOR OF ENGINEERING in **ELECTRONICS & :OMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL JNIVERSITY, BELAGAVI** during the year 2020–2021. It is certified that all orrections/suggestions indicated for Internal Assessment have been incorporated in the report leposited in the departmental library. The project report has been approved as it satisfies the academic equirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

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| **Signature of the Guide** | **Signature of the H.O.D** | **Signature of the Principal** |
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# ABSTRACT

A drone or Unmanned Aerial Vehicle (UAV) is an aerial vehicle that does not require an onboard pilot to perform the flight. The UAVs are controlled by pilots through a controller, but self-controlling systems are becoming more common Drones are mostly piloted by humans using a remote control known as a Radio Controller (RC). On the other side, the device integrator will operate it autonomously. UAVs were originally designed for military purposes, but their use in civilian applications such as firefighting missions and civilian defence, such as surveillance of a large facility's pipeline, is gradually increasing. Finally, UAVs can be used in search and rescue operations, assisting in the recovery of missing or stranded people in inaccessible locations. One such classification of UAV is Quadcopter. It is a multirotor air vehicle with four rotors. Unlike conventional helicopters, which use a special mechanism to adjust the pitch of their propellers, quadrotors use fixed-pitch propellers like airplanes. It consists of only four propellers of equal diameter that raise and propel it forward. These four props are symmetrically mounted on a cross shaped skeleton, with the payload in the middle of the frame. Those props are rotated every two rotations and vice versa, resulting in zero torque applied to the drone.

In the proposed system, the flight controller is designed using aurdino uno and MPU6050. Software, peripherals, and the drive mechanism are the three basic parts of a flight controller. The data from the sensors is processed by the microprocessor and produces an output signal using the motors control algorithms. The Electronic Speed Controller (ESC) sends the output signal to the motors.