



DAYANANDA SAGAR UNIVERSITY

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
SCHOOL OF ENGINEERING**

**KUDLU GATE
BANGALORE - 560068**

**A MINOR PROJECT REPORT ON
VISION BASED TARGET DETECTION AND POSITIONING UAV
SYSTEM**

**A thesis submitted in partial fulfilment of the requirements for the
award of the degree of**

**Bachelor of Technology
In
Computer Science and Engineering
By**

**MANASA S
GOWTHAM R
KIRAN M
KAVUTURI DEVA BHARGAV**

**Under the Guidance of
Dr.Rajanikanth Nagaraj Kashi**

Aug 19-Dec 19



DAYANANDA SAGAR UNIVERSITY

Kudlu Gate, Hosur Road, Bangalore-560068

Department of Computer Science and Engineering

BONAFIDE CERTIFICATE

This is to certify that the project titled **“VISION BASED TARGET DETECTION AND POSITIONING UAV SYSTEM”** is a bonafide record of the work done by **MANASA.S(ENG17CS119),GOWTHAM R(ENG17CS0078),KIRAN M(ENG17CS0111),KAVUTURI DEVA BHARGAV(ENG17CS0107)** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology in Computer Science and Engineering** Specialization of the **DAYANANDA SAGAR UNIVERSITY, BANGALORE**, during the year **2019-2020**.

Dr Rajanikanth Nagaraj Kashi
Guide

External Examiner

Dr Reeja S R
Project Co-Ordinator

Dr. M K Banga
Chairman

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MANASA.S(ENG17CS0119)
GOWTHAM R(ENG17CS0078)
KIRAN M(ENG17CS0111)
K DEVA BHARGAV(ENG17CS0107)

DECLARATION

We **MANASA S(ENG17CS0119), GOWTHAM R(ENG17CS0078),KIRAN M(ENG17CS0111),K DEVA BHARGAV(ENG17CS0107)**, students of 5th semester **B.Tech in Computer Science and Engineering, Dayananda Sagar University, Bengaluru**, hereby declare that titled **“VISIONBASED TARGET DETECTION AND POSITIONING UAV SYSTEM”** submitted to the Dayananda Sagar University during the academic year 2018-2019, is a record of an original work done by me under the guidance of **Dr.Rajanikanth Nagaraj Kashi, associate professor**, Department of computer science engineering, Dayananda Sagar University, Bengaluru. This project work is submitted in partial fulfilment for the award of the degree of Bachelor of Technology in Computer Science. The result embodied in this thesis not been submitted to any other university or institute for the award of any degree.

Date:

Place: Bengaluru

ABSTRACT

Wilderness search and rescue (SAR) is challenging, as it involves searching large areas with complex terrain for a limited time. Common wilderness search and rescue missions include searching and rescuing injured humans and finding broken and lost cars in deserts, forests or mountains. Incidents of commercial aircraft disappearing from radar, such as the case in Indonesia in 2014 [1–3], also entail a huge search radius and search timeliness is critical to “the probability of finding and successfully aiding the victim” [4–7]. This research focuses on applications common in eastern Asian locations such as Hong Kong, Taiwan, the south eastern provinces of mainland China, Japan and the Philippines, where typhoons and earthquakes happen a few times annually, causing landslides and river flooding that result in significant damage to houses, roads and human lives. Immediate assessment of the degree of damage and searching for survivors are critical requirements for constructing a rescue and revival plan. UAV-based remote image sensing can play an important role in large-scale SAR missions [4–6,8,9]. With the development of micro-electro-mechanical system (MEMS) sensors, the use of small UAVs (with a wing-span of under 10 m) is a promising platform for conducting search, rescue and environmental surveillance missions. UAVs can be equipped with various remote sensing systems, such as powerful tools for observing disaster mitigation, including rapid all-weather flood and earthquake damage assessment. Today, low price drones allow people to quickly develop small UAVs, which have the following specific advantages:

- Can loiter for lengthy periods at preferred altitudes;
- Produce remote sensor data with better resolution than satellites, particularly in terms of image quality;

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