PROJECT PROPOSAL

1.	**Name of the College:** **DAYANANDA SAGAR UNIVERSITY**
2.	**Project Title:** **A VISION BASED TARGET DETECTION AND POSITIONING UAV SYSTEM**
3.	**Branch:** **COMPUTER SCIENCE AND ENGINEERING**
4.	**Name of Team Members:** 1. **Name:** **KAVUTURI DEVA BHARGAV** **USN No.:** ENG17CS0107 **Email id:** devabhargavk@gmail.com **Mobile No.:**8494961903 2. **Name:** **KIRAN.M** **USN No.:** ENG17CS0111 **Email id:** kr737111@gmail.com **Mobile No.:** 6360562412
5.	**Date of commencement of the project:** 08/07/2019
6.	**Probable date of completion of the project:** 08/09/2019
7.	**Scope / Objectives of the project:** The main objectives of our project are 1. Target detection 2. Target positioning 3. Target following By using the concept of image processing. To also achieve three flight modes for the UAV(DRONE) 1. Manual mode 2. Semi-automatic mode 3. Fully automatic mode

8.	**Methodology:** Using the concept of ONBOARD IMAGE PROCESSING, we can detect, track and follow the target. We consider our whole project as three phases: **PHASE 1**: Building a drone. The basic and very important parameters to make drone that fly with the weight of all the constituents of the drone, capacity of the motors used and the power supplied the battery. Calculating the exact figures of the weight of drone and some motor parameters we need to build a drone that flies effectively. To start up with the basic wiring and fix all the components of the drone to the frame. **PHASE 2**: Calibration This phase includes the introduction of radio telemetry, video telemetry and calibration of active compartments like GPS module, Transmitter and Receiver Telemetry, Video Telemetry. **PHASE 3**: Working on vision-based targeting, tracking and following. This phase is the core and crucial phase which takes a considerable amount of time. We work to develop the drone to detect the given target, follow and track it according to the given instruction.
9.	**Expected Outcome of the project:** We expect our outcome in three main phases **PHASE1:** Be able to properly assemble the drone i.e., properly assemble the drone (achieve the basic wiring of the drone) **PHASE2:** Be able to calibrate the drone to achieve the flight of the drone in all the three possible modes **PHASE3:** Be able detect, track and follow the give target using onboard processing
10.	**Application of the project:** 1. Industry 2. Agriculture 3. Societal 4. Fire fighting 5. Military usage 6. Search and rescue operation 7.

11. **Budget details (break-up details should be given):**

Budget	Amount
a) Materials / Consumables	46,789
b) Labor	0.00
c) Travel	0.00
d) Report	0.00
e) Miscellaneous	1000
Total	47,789

LIST OF MATERIALS:

1) Quadcopter Frame 799/-
2) Landing Gear 199/-
3) Brushless DC motors 1000 KV(x4) 1516/-
4) Carbon fibre propellers(x4) 1798/-
5) Pixhawk 2.4.8 flight controller 5499/-
6) Electronic speed controller(x4) 4236/-
7) Power Module 699/-
8) GPS module 2199/-
9) GPS module stand 299/-
10) Radio Telemetry 2499/-
11) Anti vibrator for flightcontroller 399/-
12) RC Receiver and transmitter 4719/-
13) Raspberry pi(along with cover case) 3204/-
14) SD card(16 GB) 295/-
15) FPV camera 1690/-
16) 6200 mah 3s lipo battery 5290/-
17) Sj6 high quality camera 9499/-
18) Gimbal 1950/-

12.	**Any other technical details (Please specify):** This project also deals with the autopilot mode in which the drone returns to its origin if it goes out of the control by chance or if the drone losses contact with the controller.

(Name & Signature of HOD with Seal)

Email id:

Contact No.: