A PROPOSAL FOR FUNDING

QUADCOPTER PROJECT

1.Project summary

As electronic devices and technology have served as a valuable asset to the entirety of mankind, we students of Electronics Communication and Information engineering currently at our undergraduate years at IOE Pulchowk Campus have taken an initiative to introduce such devices to our community as well. Our group is largely concerned with researching the socioeconomic aspects of such UAV integration.

As with any emerging technology that we encompass the primary facets to consider is the commercial viability of the various applications of the product. By doing so the feasibility of the product can be understood and its market projections and product alternatives can be considered.

The project mentioned herewith is that of a strong, agile and athletic quadcopter whose primary features range from aerial photography and cinematography to cleansing mechanism for solar panels. The auxiliary feature comprises of an object tracking system in conjunction with a system to forecast weather and is equally applicable in agricultural fields. The project aims to consolidate electronic devices and technology to our day to day domestic and commercial life and change it for the better.

Introduction:

The quad copter that we propose is a fairly strong and athletic with supreme diligence and robustness to it. The proposed copter is to have precise positioning with gimbled camera for surveillance purpose, sprinklers and wipers for cleansing purpose and various sensors for other auxiliary purpose. The copter will be capable of flight at almost any conditions.

P.S: We plan on developing the quad copter from the scratch and every component will be built using the basic electronic devices and not using the commercially available technology. And if the project is deemed a success then it can be expanded to a wider scale and if our group is able to produce a set of viable application, we can emphasize these and perform further research relative to the use of this application and potential investment therein.

Proposed applications

The following are the applications of the proposed quad copter:

1)Solar panel cleansing

2)Aerial Photography, cinematography and traffic Monitoring

3)Weather Reconnaissance and Environmental Monitoring

4)Object Tracking

5)Agricultural Monitoring

6)Localized Surveillance

Distinctions and Influence:

Unlike a uni-purpose drones or UAV's that been prominently featured in university projects these days ours is much more versatile and the cleansing feature is a fairly new concept. We believe our ideas to make a quad copter of such wide range of salient features could serve as a huge transition from the typical drones used only for aerial photography which could later be a developed into a merchandising mainstay.

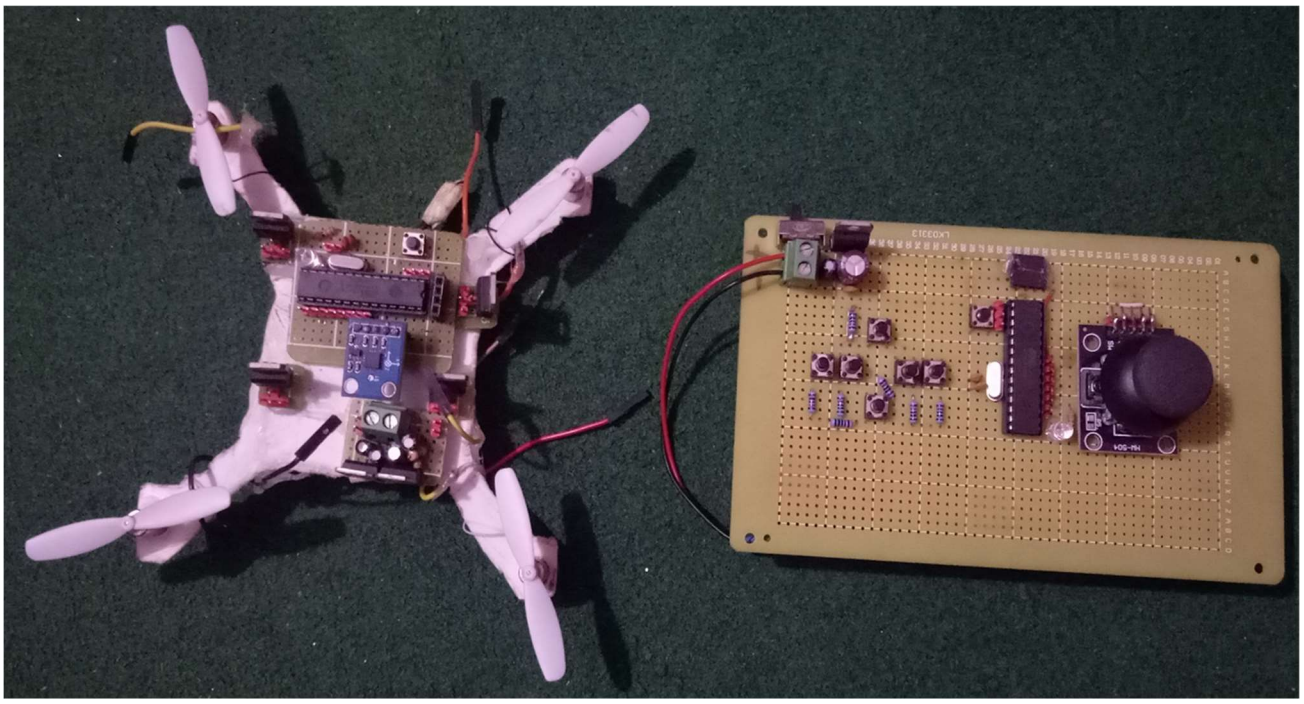
So, we have reached the doorsteps of this organization with a plea to back us up financially. In return we vow to perform any sort of advertising or other conducts as per your demand so long as it is under our prowess.

Our past experiences and projects include:

1. Heavy weight lifting mini electronic kart

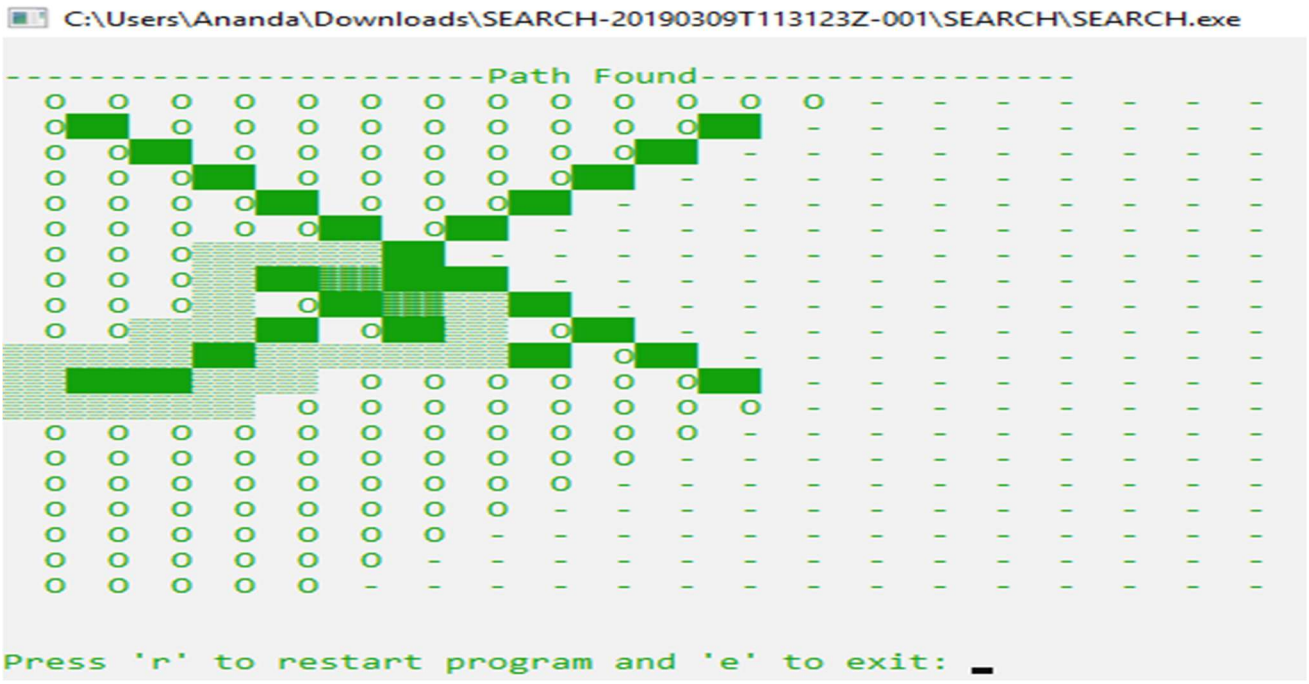
Our first major breakthrough came in the form of a kart, a small box shaped electronically manned vehicle with which we enrolled into the LOCUS ROBOWARZ 2019 and progressed in the competition. The foundations were built on top of four wiper motors enwrapped in a wooden body. Every components and circuits were built using fundamental electronic devices and circuits were designed employing the knowledge we have accessed so far. The cart could support up to 50 kg of mass and sustain a lot of hits from the opposing structures. The cart could access all sorts of movements as each wheel was operated by unique drivers.

2.Athletic, self-balancing mini quadcopter



The other project that we have worked on as a unit is a mini quadcopter. This was a very miniature version of a quad captors and it was aimed to be cable of widespread athletic conduct spanning from rotational movement and agile enough to regain its stature and trajectory midair upon being struck. Grievously though as the theoretical calculations couldn't be operated under the existing resources further alleviated by our limited financial footing the project never reached its expected conclusion. Whatever we could do has been pictorially represented above.

3. Search Algorithm Simulator



A search algorithm is the step-by-step procedure used to locate specific data among a collection of data. It is considered a fundamental procedure in computing. In computer science, when searching for data, the difference between a fast application and a slower one often lies in the use of the proper search algorithm.

We implemented 3 graph search algorithms:

- Breadth first traversal (BFS)
- Depth first traversal (DFS)
- Dijkstra algorithm

We implemented these algorithms in a grid with obstacles to find the shortest path between start and end points. We first ask the user to enter the number of obstacles, specify the obstacles. We then ask the user to enter start and end position. Then they chose the algorithm and our program searches for the shortest path in the grid.

Applications of the program

These algorithms can have many real-life applications such as:

- GPS Navigation Systems: Navigation systems such as the Google Maps, which can give directions to reach from one place to another use BFS. They take your location to be the source node and your destination as the destination node on the graph.
- Facebook: It treats each user profile as a node on the graph and two nodes are said to be connected if they are each other's friends. In fact, apply BFS on the Facebook graph and you will find that any two people are connected with each other by at most five nodes in between.

If you feel that our idea is of any worth of receiving financial backings from your organization then, we will be honored and glad to present you the insights on project covering its methodology and fee structure.