Patent Search

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Inventor

Name	Address
Dr.M.Ravikiran	Professor in Education Technology, State Council of Education Research and Training (SCERT), Amaravathi, Andhra Prades India
Y Mohana Roopa	Professor, Dept of CSE, Institute of Aeronautical Engineering, Hyderabad, Telangana, India
Dr.Manjot Kaur	Assistant Professor, School of Computer Science and Engineering, Lovely Professional University, Phagwara-144411, Punj
Pratik Kumar Dubey	Assistant Professor, Department of Electronics and communications Engineering, Dr.K.N.Modi Institute of Engineering ar Technology Modinagar, Ghaziabad U.P.201204
Mr.Sanjaykumar Mahadeo Ingale	Associate Professor, Department of Mechanical Engineering, Sanjay Ghodawat University, Kolhapur, Maharashtra, India 416018
Dr. Namita Arya	Assistant Professor, Galgotia University, Greater Noida, Gautam Buddha Nagar, Uttar Pradesh, India, 203201
Mr. C. Saravanakumar	Assistant Professor, Department of Electronics and Communication Engineering, SRM Valliammai Engineering College, Kattankulathur, Tamilnadu, India

Applicant

Name	Address
Dr.M.Ravikiran	Professor in Education Technology, State Council of Education Research and Training (SCERT), Amaravathi, Andhra Prades India
Y Mohana Roopa	Professor, Dept of CSE, Institute of Aeronautical Engineering, Hyderabad, Telangana, India
Dr.Manjot Kaur	Assistant Professor, School of Computer Science and Engineering, Lovely Professional University, Phagwara-144411, Punj
Pratik Kumar Dubey	Assistant Professor, Department of Electronics and communications Engineering, Dr.K.N.Modi Institute of Engineering ar Technology Modinagar, Ghaziabad U.P.201204
Mr.Sanjaykumar Mahadeo Ingale	Associate Professor, Department of Mechanical Engineering, Sanjay Ghodawat University, Kolhapur, Maharashtra, India 416018
Dr. Namita Arya	Assistant Professor, Galgotia University, Greater Noida, Gautam Buddha Nagar, Uttar Pradesh, India, 203201
Mr. C. Saravanakumar	Assistant Professor, Department of Electronics and Communication Engineering, SRM Valliammai Engineering College, Kattankulathur, Tamilnadu, India

Abstract:

The goal of this project is to create a visual tracking system that can be installed on an unmanned aerial vehicle (UAV). This system will direct a drone land precisely on it after it has stopped moving. On the underside of the drone are a pair of LED lights, each of which emits a distinct hue. The visual the mobile robot has the capability of determining both the heading angle and the distance between the movable robot and the drone. The PID cont adjustments to the heading angle as well as the flight velocity of the drone in the pitch and roll directions. As a result, the flying speed and angle are drone can land more rapidly. The height of the drone was taken into consideration while making adjustments to the PID tuning settings. The embedc robot, which is outfitted with Linux Ubuntu and analyses pictures with OpenCV, is able to deliver the control command (SDK 2.0) for the Tello EDU dr Protocol. The mobile robot is also equipped with Linux Ubuntu. The mobile robot may be followed automatically by the drone. Once the mobile robc stop, the drone will be able to land on top of the mobile robot. According to the findings of the experiments, the drone is able to precisely lift off fror visually follow the mobile robot, and then return to its original landing spot on the top of the mobile robot.

Complete Specification

Description:This application is concerned with the mobile robot and drone systems in general.
Background of the invention:
In recent years, there has been growth in the drone sector, and drones are extensively utilized because of their low cost, lightweight, and high level orient itself using Lidar, GPS, or an optical flow sensor, allowing it to fly autonomously while maintaining its stability. The decade of 1980s saw the b into robotic image recognition, which coincided with the fast expansion of computer technology. After that, in the 1990s, faster processors and mo allowed for the incorporation of image recognition technology into drones. According to one study, for instance, there are currently helicopters in c outfitted with equipment for vision-based tracking. Image-based optical flow positioning is used almost exclusively as the positioning technique sin be received in inside conditions. This is the case. The Lucas–Kanade (LK) algorithm for optical flow localization combines it with the drone tracking c accomplish drone localization and automated flying inside. This makes it possible for drones to navigate interior environments without the need fc accomplish an autonomous and exact landing of the drone, the image recognition algorithm is programmed to identify ground markers via the use attached to the underside of the drone. The created technique was able to recognize and track an item in AR that had a certain form. The drone qu follow the line, anticipate turns, and spin itself around on curves. It also had the ability to follow the line. This paper discusses an implementation n UAV target tracking system that is based on OpenMV in order to solve the problem of a traditional target tracking UAV system that is based on visu complex structures and low resource utilization. The paper was written in order to solve this problem. Monocular vision feature point extractions a tracking methods, and other topics are the focus of the work in which a tiny drone is used as the suitable platform for the necessary theoretical stu

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APPLICANT NAME	1 . Dr.M.Ravikiran 2 . Y Mohana Roopa 3 . Dr.Manjot Kaur 4 . Pratik Kumar Dubey 5 . Mr.Sanjaykumar Mahadeo Ingale 6 . Dr. Namita Arya 7 . Mr. C. Saravanakumar
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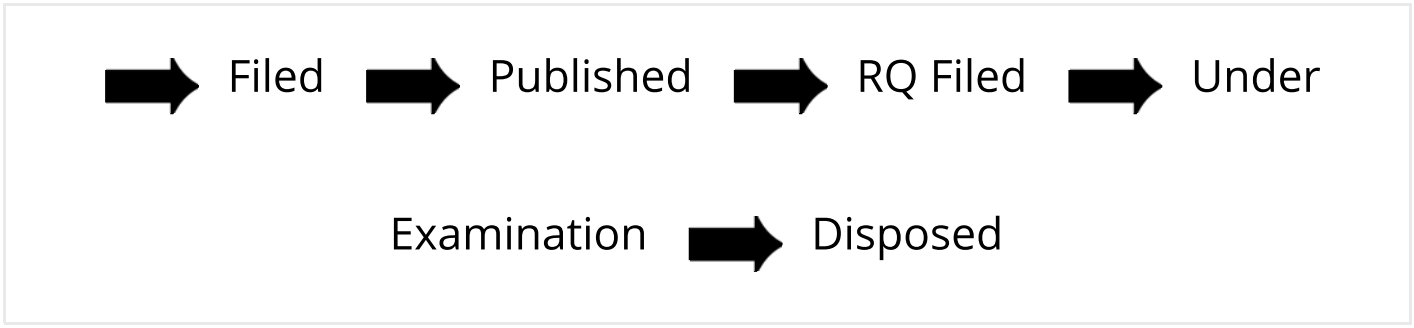

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