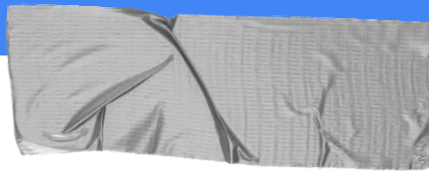


Kinect Hand Gesture Drone Flight Controller

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Overview

- Background
- User Requirements
- Requirements Analysis Document
- Project Plan

Background

- **Control a drone with hand gestures**
- **Using a Microsoft Kinect**
- **First step of the system**
- **Then sending signals to the drone**

User Requirements

- **Control a drone using natural movement**
- **Result of the system is controlling the drone**
- **System recognise a predefined hand gestures**
- **System should be accurate**

User Requirements cont.

➤ **Limitations of the system:**

- **The system does not track more than one user at a time.**
- **Users of the system should turn the drone on.**

➤ **Expected from the system:**

- **System should detect users hands and arms.**
- **Recognise hand gestures, which will control the drone.**
- **User friendly interface.**

Requirments Analysis Document

- **User performs hand gestures clearly**
- **Only one user will be recognised**
- **User faces the Kinect Directly**
- **The hands and arms are region of interest**



Project Plan

● Research

- Learn to use OpenCV for image processing
- Learn to send commands to the drone

● Implementation

- Recognise additional set of hand gestures
- Improve on hand gesture recognition

Term 1

Term 2

Term 3

Term 4

● Prototype

- Accurately locate region of interest
- Recognise a predefined set of hand gestures
- Send commands to drone via WiFi

● Test and Evaluate

- Test the accuracy of the system
- Test the speed of detecting a gesture
- Test the accuracy of sending a signal to the drone



References

- Boudjit et al, Control of flight operation of quad rotor ar. Drone using depth map from kinect sensor.
- Bradski et al, Learning OpenCV: Computer vision with the OpenCV library.
- Sanna et al, A kinect-based naural interface of quadrotor control.

Questions?