



## **MOBILE ROBOTICS COURSE PROJECT**

### **CONTROLLING ARDRONE WITH SIMPLE HAND GESTURES**

#### **Group Members:**

**14030008 – Omair Hassaan**

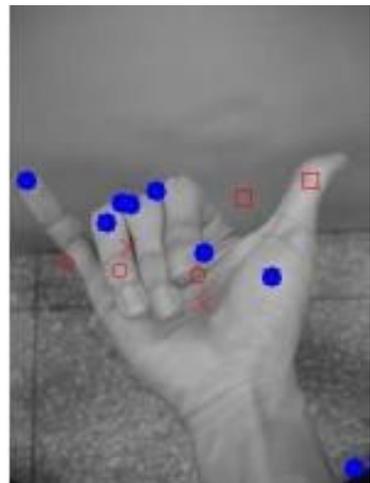
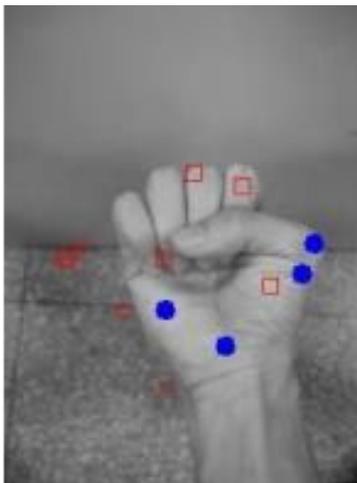
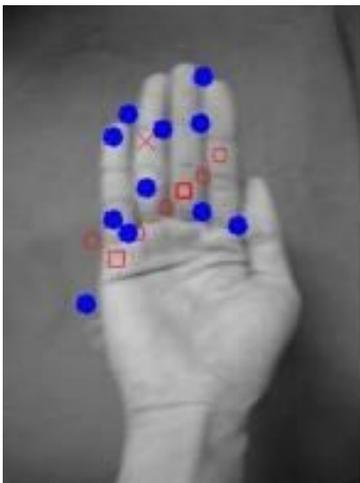
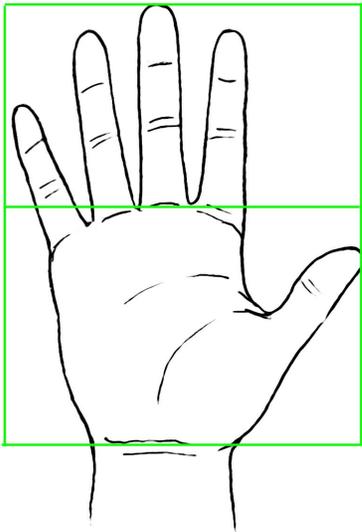
**14030015- Muhammad Ahmer Naeem**

#### **Date:**

**10<sup>th</sup> April 2015**

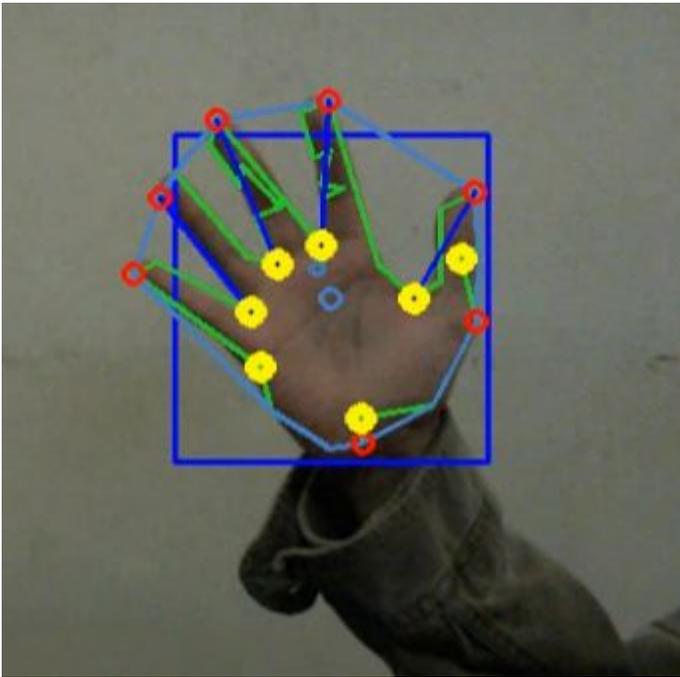
## **Project Description:**

In this project we will be Controlling Roll & Yaw of Ardrone using simple movement of hand in front of Ardrone's Camera without using any marker or glove to recognize hand. Speed of Ardrone will be changed with respect to speed of hands movement.



## **Methodology**

1. Use openCV to Recognize hand ( distinguish it from the environment)
2. Detect features using front camera of Ardrone.
3. Extend marker tracking to recognize hand
4. Extract Hand-Features
5. Track Feature-Points over time (Find robust matches)
6. Compute the Transformation between old Hand-Pose and new one
7. Lock Ardrone's frame with the hand frame and follow movement.
8. Apply Transformation to AR-Drone
9. Follow Hand's movement to change Ardrone's direction
10. Follow hand's velocity to change Ardrone's speed.



**Deliverable:**

Live demonstration of proposed Project.

**References:**

<http://vision.in.tum.de/teaching/ss2013/visnav2013#projects>