# Lab 5: Object Tracking

## Learning Outcomes

* use Image Moments for Tracking
* use HAAR Cascade Classifiers for Face Detection

## Section 1: Requirements and Design

In this lab, you will build a rosnode that detects and tracks objects and human faces.

## Section 2: Installing the Lab

To perform this lab, you will need to get the moment\_tracker and face\_tracker templates into your catkin workspace. First ensure that your Jet has internet access by connecting it using WiFi or ethernet. Next ssh into Jet and enter the following command:

wget http://instructor-url/lab5\_object\_tracking/code.zip

Where the url should be replaced by the URL provided by your instructor. Now unzip the lab:

unzip code.zip

Move the resulting folder into your catkin workspace:

mv moment\_tracker ~/catkin\_ws/src/ -r  
mv face\_tracker~/catkin\_ws/src/ -r

Delete the zip file:

rm code.zip

To build the code, use the following command when you are in ~/catkin\_ws/:

catkin\_make && source devel/setup.sh

To run the nodes, first launch the Jet platform (see lab2 for instructions), then use the commands below:

rosrun face\_tracker face\_tracker  
rosrun moment\_tracker moment\_tracker

## Section 3: Object Tracking

## Section 4: Face Tracking

## Section 5: Optical Flow