Lab 7 tasks

- General Goal – Obtain Inverse Kinematics without the robot model
- You will be provided with the Matlab scripts – Download and run Matlab example. The example is for 5-joint planar robot arm from ROS labs.
- Tune Neural Network parameters to get better performance (99 points)
- Short report (100 points)
  - Problem statement (describe the goal and robot)
  - Describe your Neural Network
  - Results (include the time needed for running the code, your computer parameters, the mean accuracy)
  - Figure (plot the robot) that illustrate the predicted and the real robot configuration. Plot the desired end-effector pose (use "*hold on"* and use function "*scatter3")*
- Implement the same for the RRR robot (Lab 5 part 1 Fig 1)

Scatter3 to show FK resutls

```
planarrobot_student
home = [45 45 0 45 -45]*deg;
planar_robot.plot(home)
pose_end = planar_robot.fkine(home);
hold on
%real
xyz = transl(pose_end)
scatter3(xyz(1),xyz(2),xyz(3),100)

% predicted
load net
sample = ones(1,1,5);
sample(1,1,:) = home;
xyz2 = predict(net, sample)
hold on
scatter3(xyz2(1),xyz2(2),xyz2(3),'*')
```