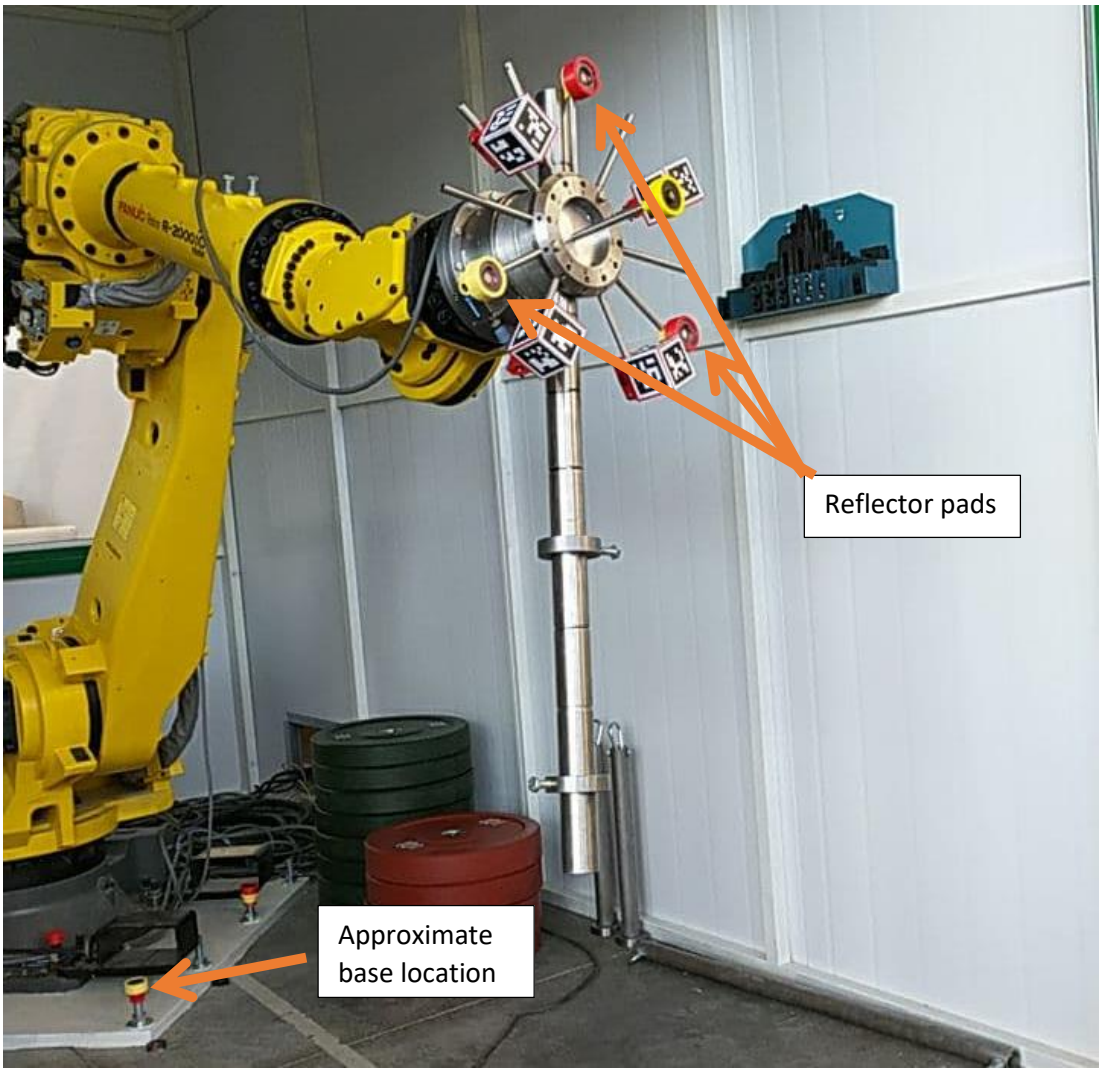
Homework 6

Fanuc robot geometrical calibration



Tasks is to calibrate an industrial robot by building a robot model and identifying robot parameters from the dataset. You are allowed to use any method for this task.

Industrial robot: FANUC R-2000i C/165F

Dataset includes:

- 24 robot configurations (q – joint angles in radians from the robot software)
- Position of 3 measuring points location (mA, mB, mC) measured with FARO Vantage
- 10 measurements per one configuration

Metrics:

- RMS Distance-based residual as the main metric for evaluation
- RMS and MAX Coordinate based residual, mm
- RMS and MAX Distance-based residual, mm

Evaluation based on the main metric:

- Top 2 solutions – A grade

- 3-6 – B grade
- 6-8 – C grade

Requirements:

1. Matlab / Python code [1] [2]
   - You must provide an evaluation function which takes *.mat file as input and metrics as an output
2. Report:
   - Explanation of the solution
   - Link to the project on github.com

Submit only report to moodle.

[1] Not allowed to use robotics libraries and toolboxes.

[2] Cheat penalty: 0 for Homework.