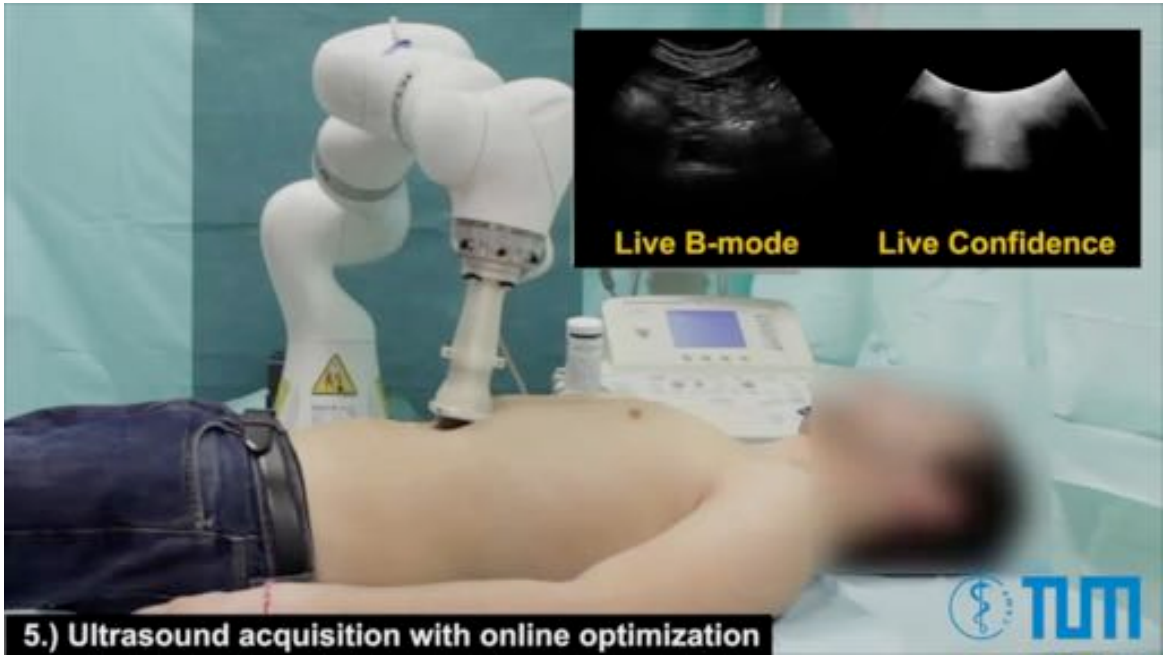
easy_handeye: hand-eye calibration for humans

Marco Esposito
Computer Assisted Medical Procedures
Technical University of Munich

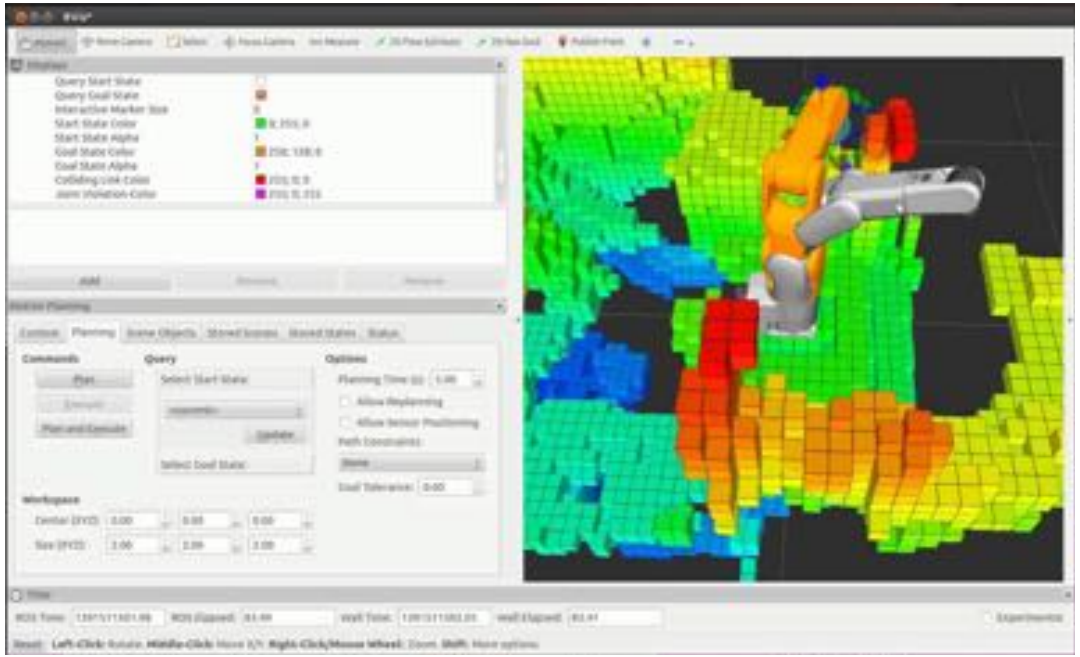
Technische Universität München + Johns Hopkins Whiting School of Engineering

Precise sensing requires precise calibration



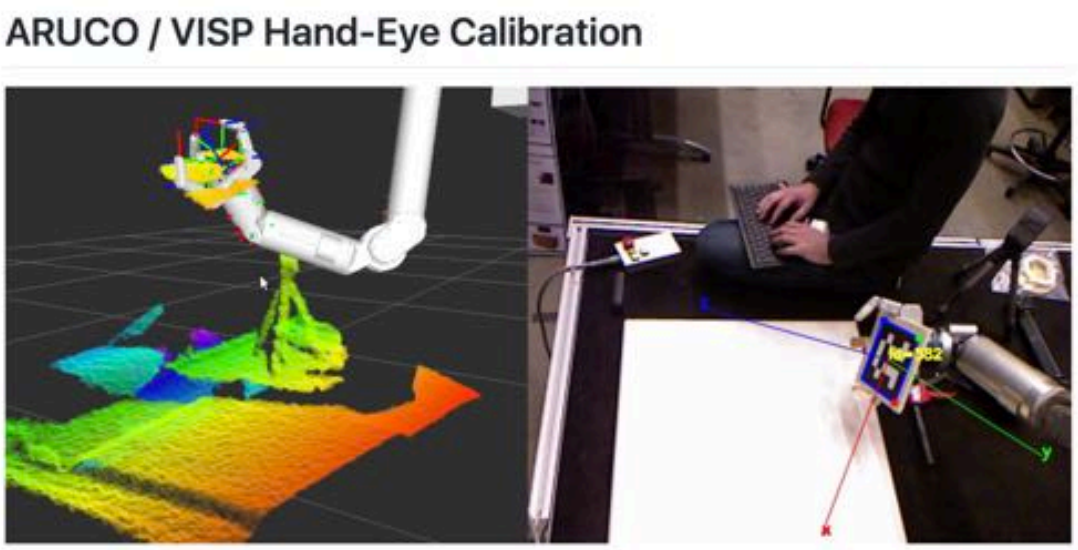
https://www.youtube.com/user/campTUM

A familiar example: MoveIt! and RGBD



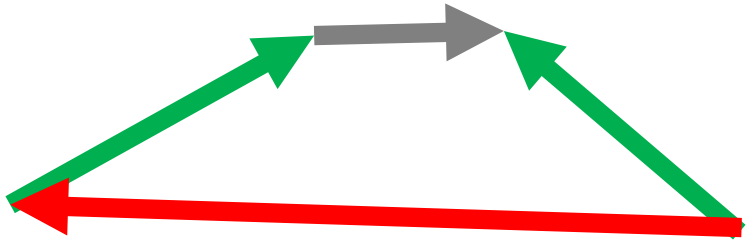
https://www.youtube.com/watch?v=oVQiLIBRSHw

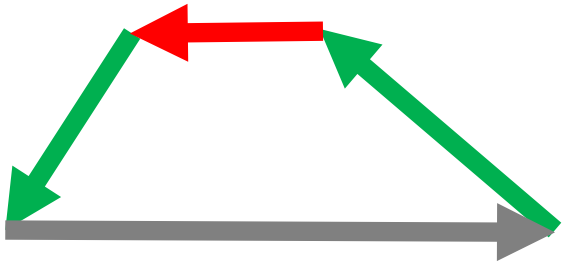
Inspiration: jhu-lcsr/aruco_hand_eye



https://github.com/jhu-lcsr/aruco_hand_eye

eye-on-base vs eye-in-hand





Measured Unknown Not used

Hand-eye calibration in one launch include

```
<launch>

    <include file="$(find easy_handeye)/launch/calibrate.launch">

        <arg name="eye_on_hand" value="false" />

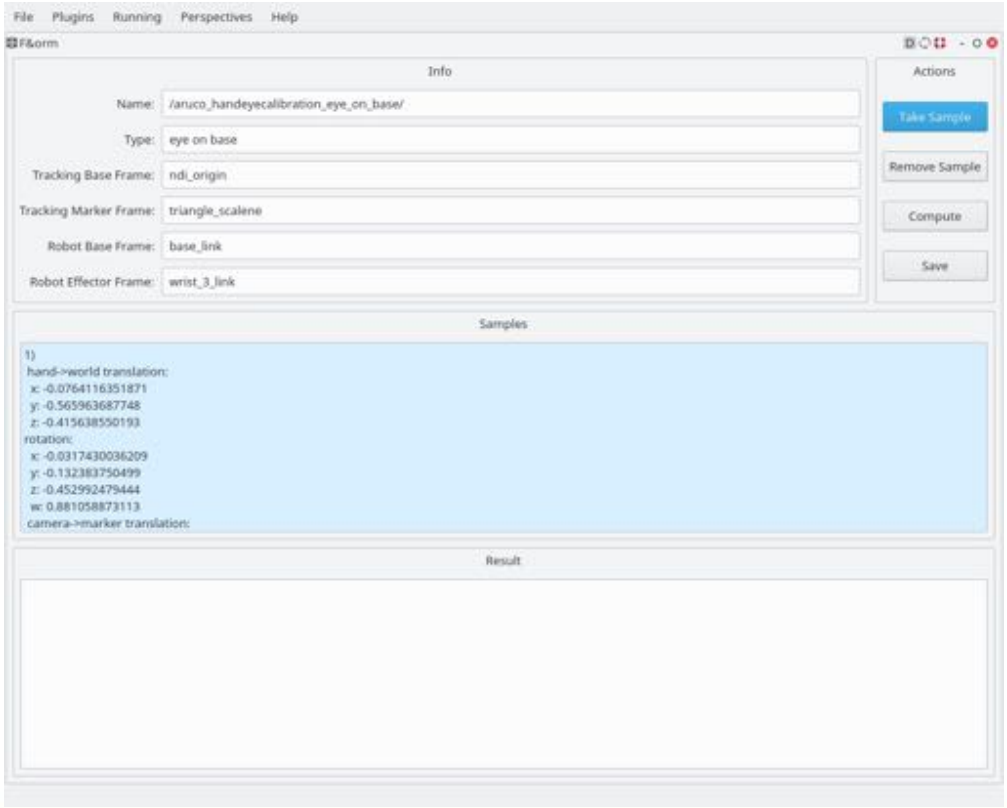
        <arg name="robot_base_frame" value="base_link" />
        <arg name="robot_effector_frame" value="ee_link" />

        <arg name="tracking_base_frame" value="camera_link" />
        <arg name="tracking_marker_frame" value="marker1" />

    </include>

</launch>
```

Calibration GUI



Hand-eye calibration in one launch include

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<launch>

    <include file="$(find easy_handeye)/launch/calibrate.launch">

        <arg name="eye_on_hand" value="false" />

        <arg name="robot_base_frame" value="base_link" />
        <arg name="robot_effector_frame" value="ee_link" />

        <arg name="tracking_base_frame" value="camera_link" />
        <arg name="tracking_marker_frame" value="marker1" />

    </include>

</launch>
```

```
<launch>

    <include file="$(find easy_handeye)/launch/publish.launch" />

</launch>
```

Can I have many calibrations?

```
<launch>

    <include file="$(find easy_handeye)/launch/calibrate.launch">

        <arg name="eye_on_hand" value="false" />
        <arg name="namespace" value="robot_to_kinect" />

        <arg name="robot_base_frame" value="base_link" />
        <arg name="robot_effector_frame" value="ee_link" />

        <arg name="tracking_base_frame" value="camera_link" />
        <arg name="tracking_marker_frame" value="marker1" />

    </include>
</launch>
```

```
<launch>

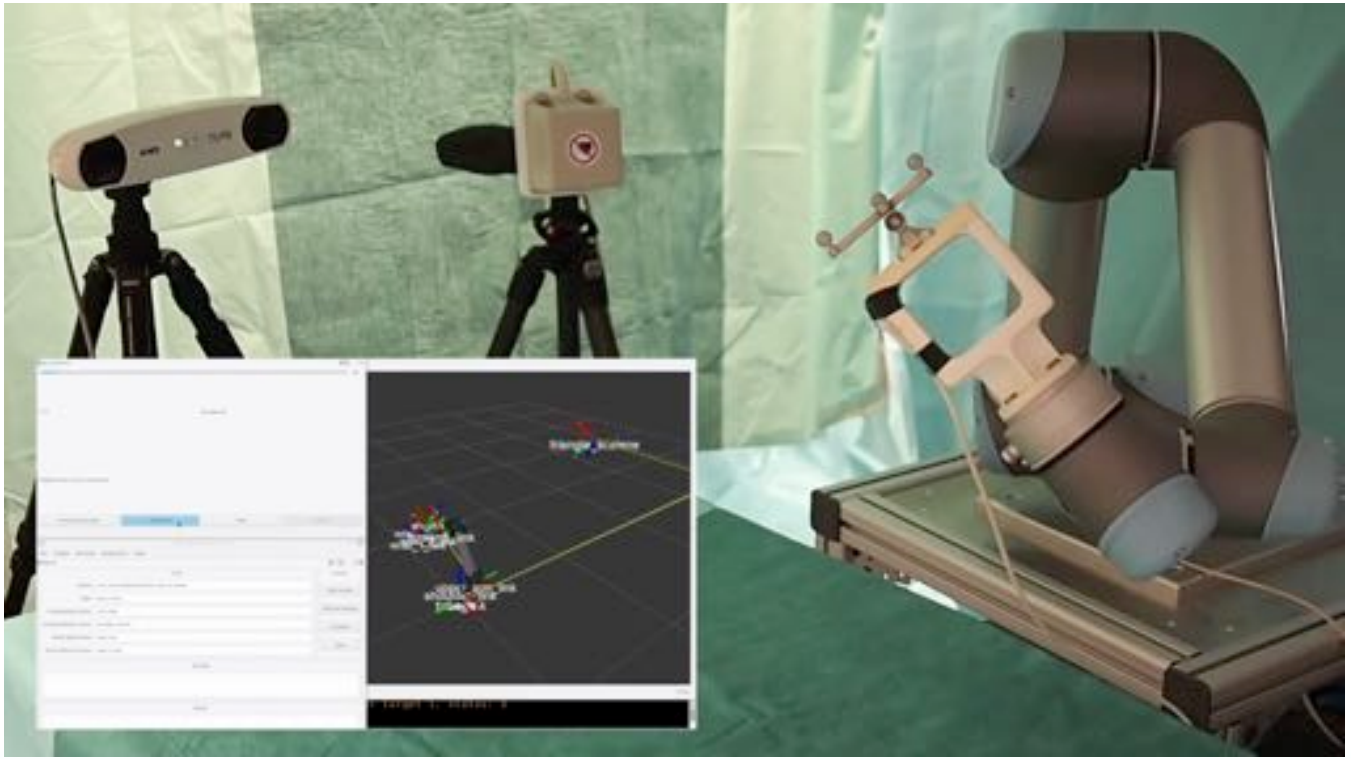
    <include file="$(find easy_handeye)/launch/publish.launch">

        <arg name="namespace" value="robot_to_kinect" />

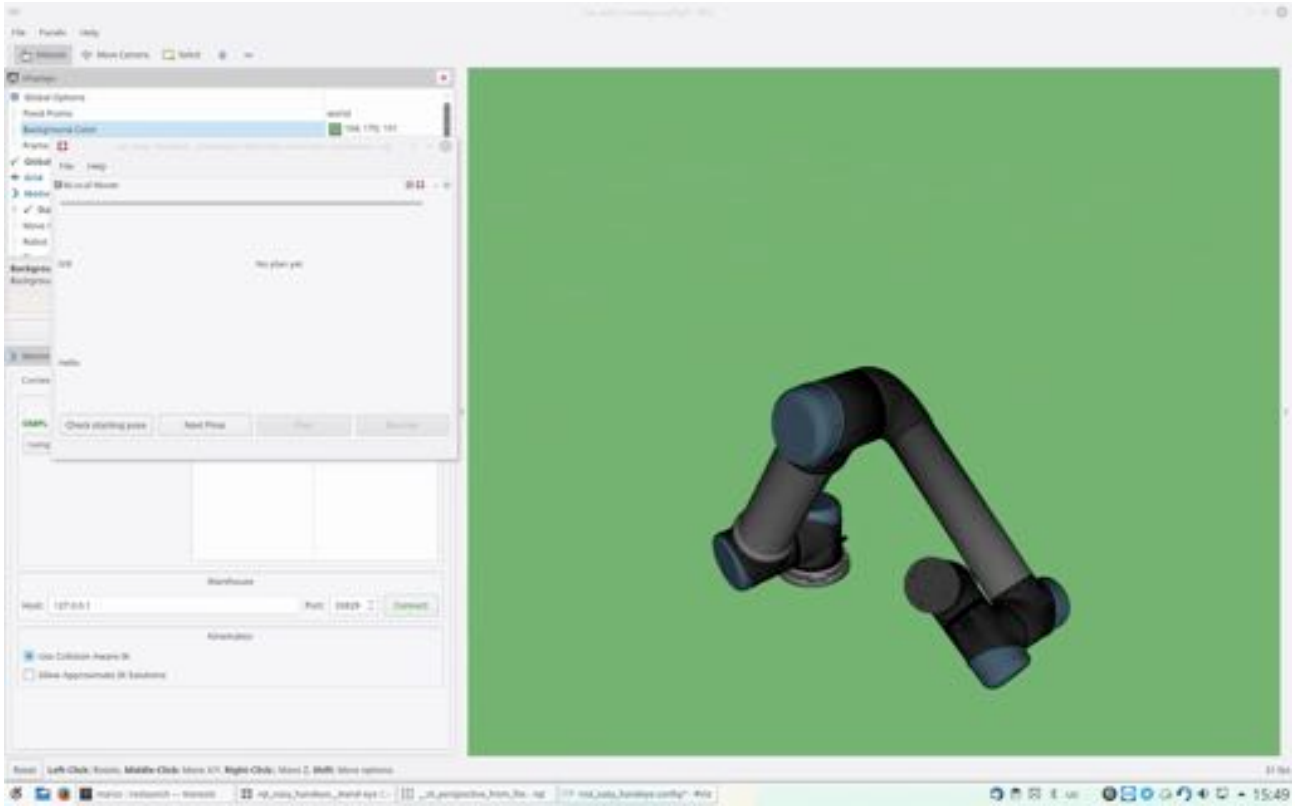
    </include>

</launch>
```

Do I have to move the robot myself?



Can I trust the automatic motion?



Thank you for your attention!

easy_handeye: https://github.com/marcoesposito1988/easy_handeye
iiwa_stack: https://github.com/SalvoVirga/iiwa_stack
tf_bag: https://github.com/marcoesposito1988/tf_bag
Youtube channel: https://www.youtube.com/user/campTUM