Calibrating the PR2
ROS + PR2 Training Workshop
Why is calibration important?

Sensor Fusion

Manipulation
What are we calibrating?

- Joint Angle Offsets
- Tilting Laser Position
- Stereo Baselines
- Camera Positions
- Joint Angle Offsets

Not Calibrating:
- Camera Distortions
- Camera Projections
- Base Laser Location
- Hi Res Camera Location
- Wheel Odometry
- IMU
Where is it stored?

/\texttt{etc/\texttt{ros/urdf/robot.xml}}

- Kinematic Data
- Sensor Positions
- Lots of other robot info

Camera EEPROM

- Distortion Parameters
- Projection Matrices
- Stereo Baselines
Calibration Workflow

1. **Calibrate Cameras**
2. **Capture Data**
3. **Estimate Params**
4. **Update robot.xml**
5. **Update Camera EEPROM**

Calibrated!
Under the Hood: Data Flow

capture_data: cal_measurements.bag

estimate_params: system.yaml

update_ee_prom: system_calibrated.yaml

write_urdf: robot.xml

write_robot_calibrated.xml:
- robot.xml
- system_calibrated.yaml