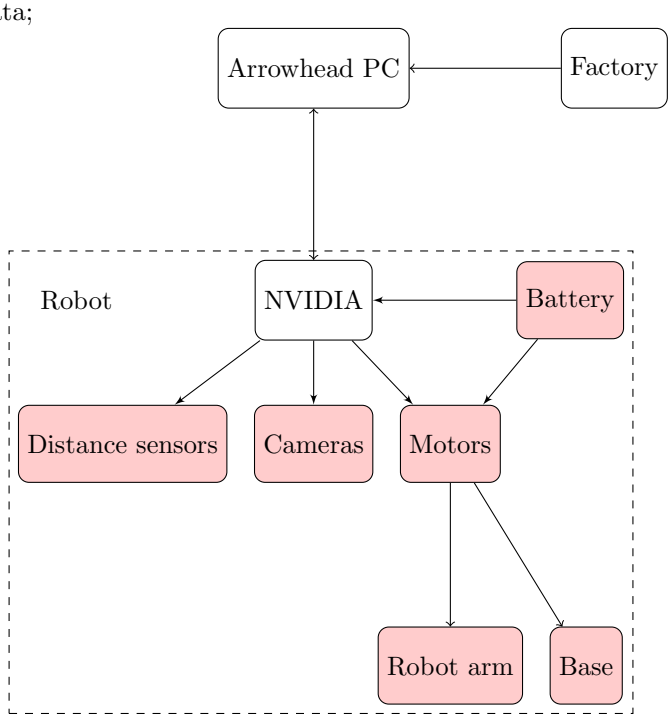
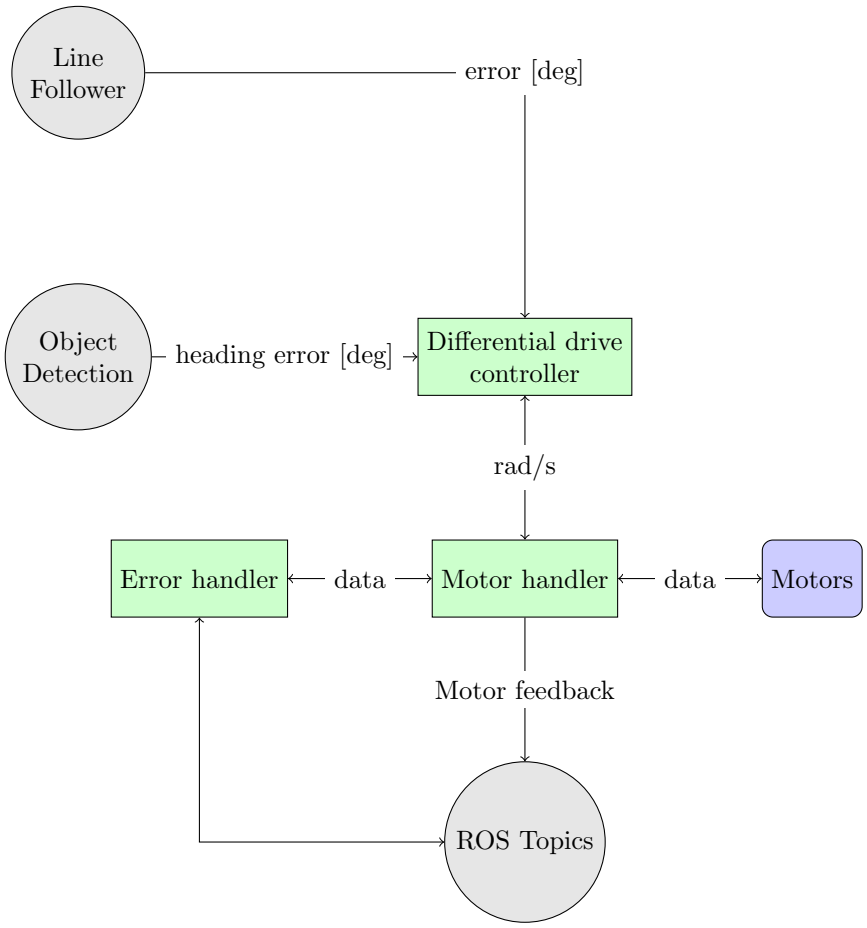
Hardware

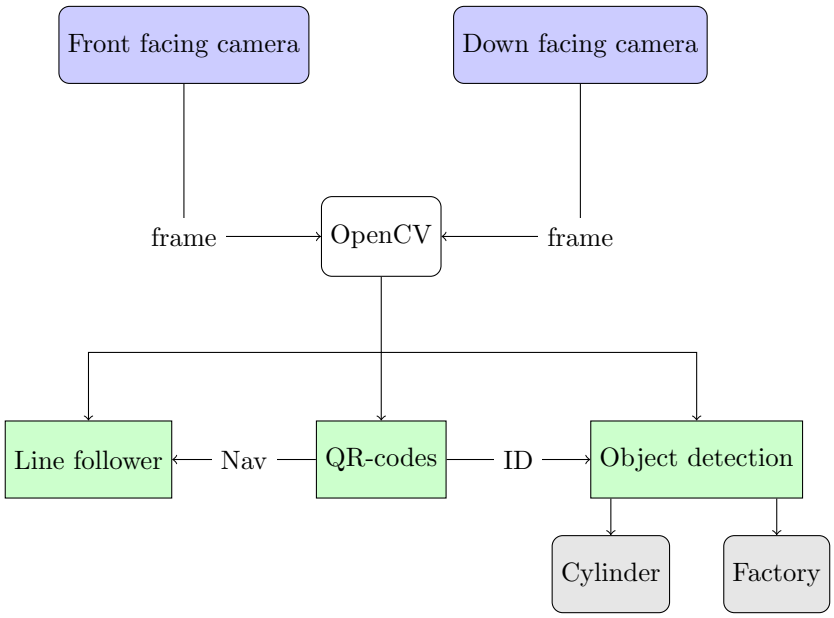
Data;



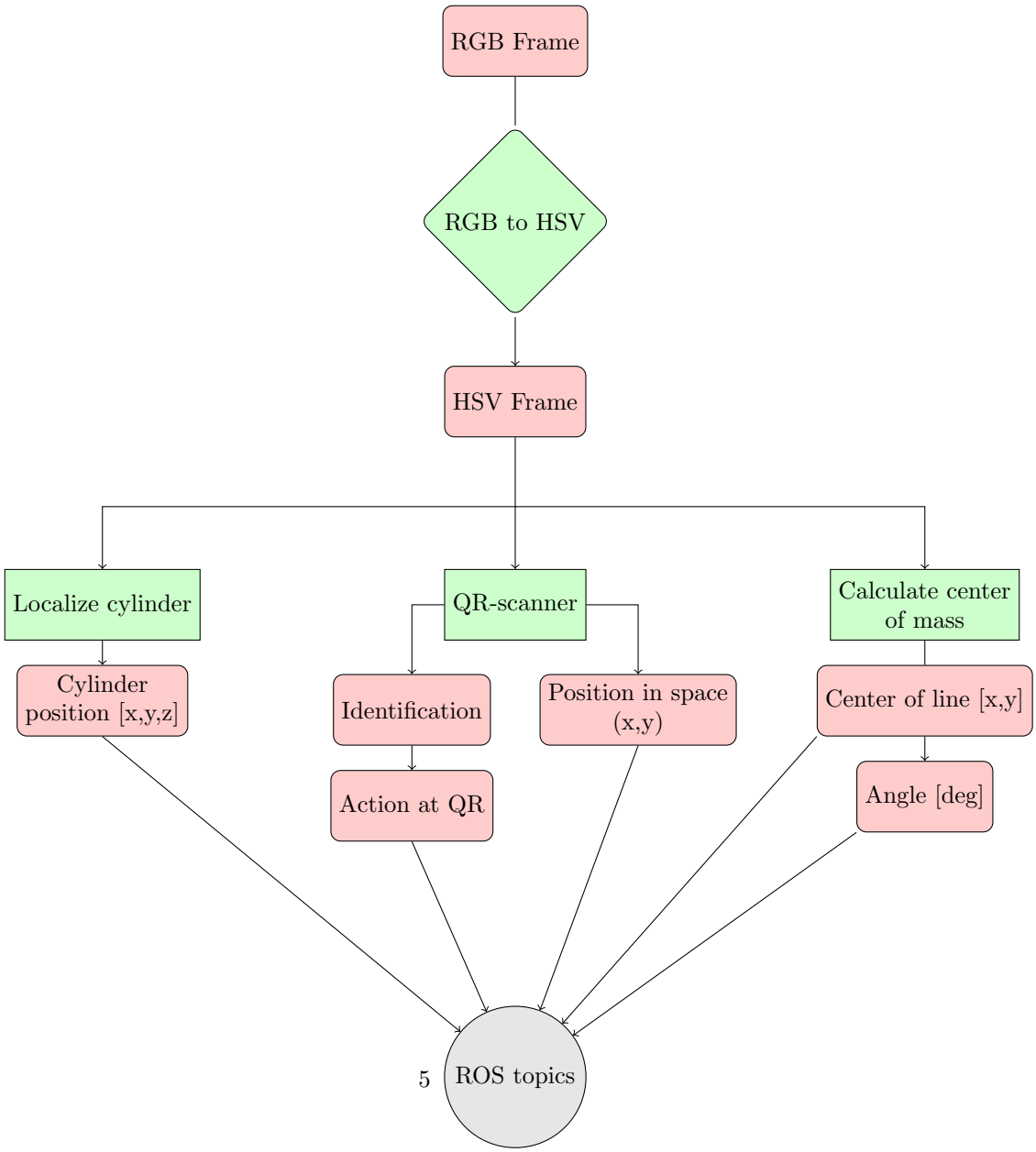
Base


Line Follower
error [deg]
Object Detection
heading error [deg]
Differential drive controller
rad/s
Error handler
data
Motor handler
data
Motors
Motor feedback
ROS Topics

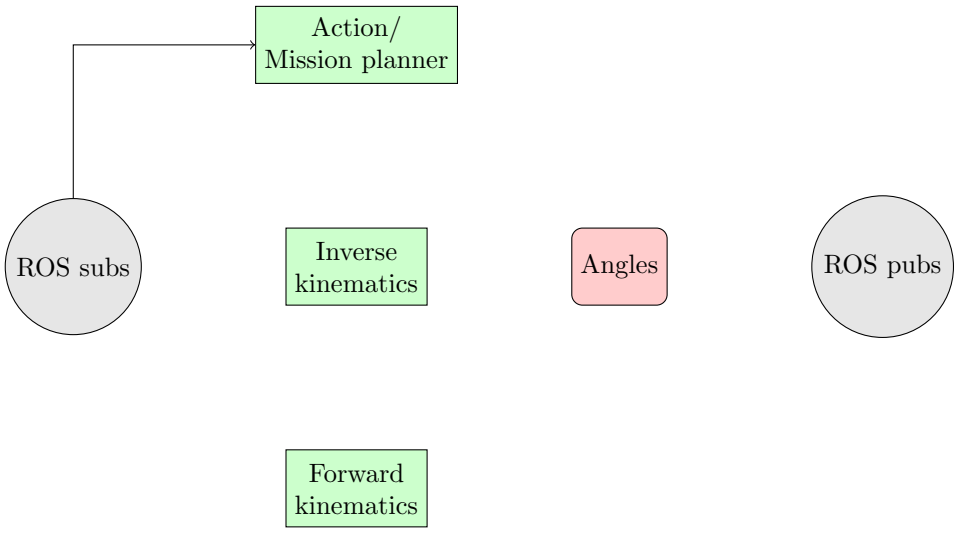
Machine vision

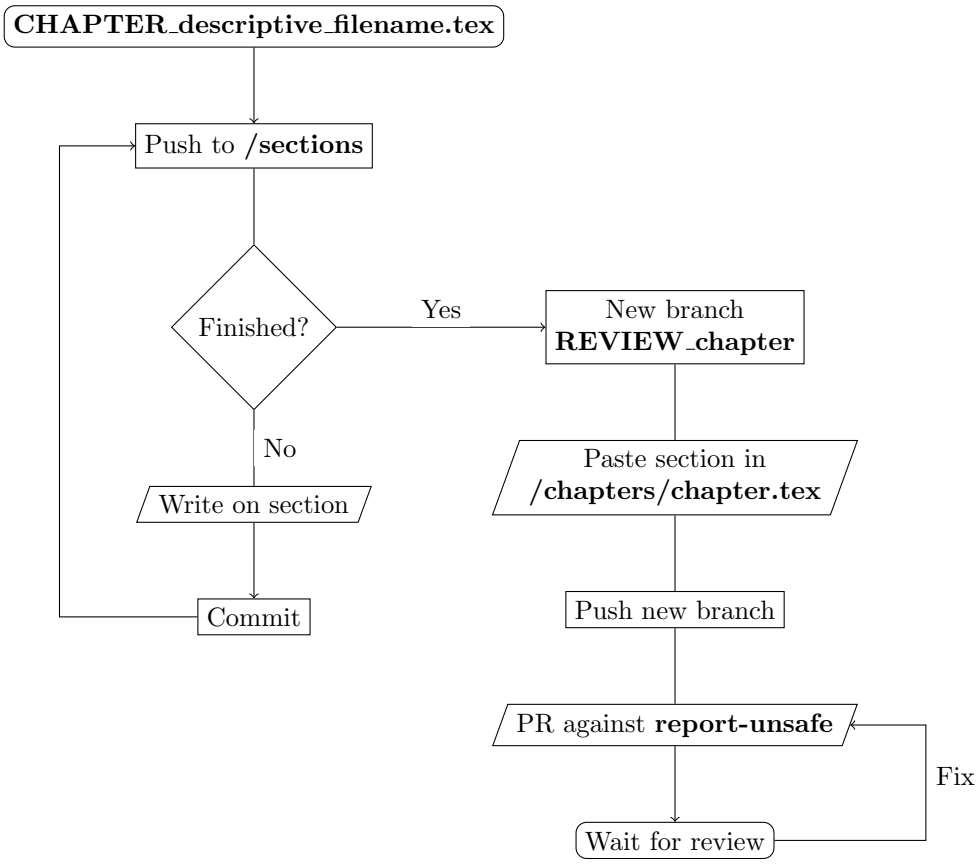


OpenCV


RGB Frame
RGB to HSV
HSV Frame
Localize cylinder
QR-scanner
Calculate center of mass
Cylinder position [x,y,z]
Identification
Position in space (x,y)
Center of line [x,y]
Action at QR
Angle [deg]
ROS topics

Robotic arm


Action/
Mission planner
ROS subs
Inverse
kinematics
Angles
ROS pubs
Forward
kinematics

Chapter 1

Report-unsafe workflow