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List of Abbreviations and Symbols

Abbreviations

MR	Mobile robot
IR	Infrared
LIDAR	Light detection and ranging
TLD	Tracking learning detection
KLT	Kanade lucas tomasi
KF	Kalman filter
GPS	Global positioning system
RFID	Radio frequency identification
SVM	Support vector machines
HOG	Histogram of oriented gradients
ROS	Robot operating system
K	Kalman gain
V-J	Viola jones
COG	Center of gravity
ICC	Instantaneous center of curvature
2D	Two dimensional
3D	Three dimensional
rhs	Right hand side
fps	Frame per second

Symbols

$ii(x, y)$	Image integral
(V_L , V_R)	Linear velocity
(ω_L , ω_R)	Angular velocity
V_l	Left wheel velocity
V_r	Right wheel velocity
L	Distance between right wheel and left wheel (axle length)
r	Radius of the wheel
$I_{\text{gray}}(x, y)$	Pixel values in grayscale format
$w_1, w_2\ w_3$	Weights
c_n	Weighted cost function
n	Number of handleable objects
A_n	Normalized object area
$O(b^d)$	B is the branching factor and d is the depth of the goal node.
d_{tg}	Normalized distance from target (object location) to goal
d_{st}	Normalized distance from start to the target value
$\hat{x}_k$	New updated estimate
$\hat{x}_k^-$	Best estimate prior to receiving a measurement at time t_k