UML Class Diagram

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ObjectDetection

- nh : ros::NodeHandle

- subscibeImages : ros::Subscriber

publishingRate: float
hsvImage: cv::Mat
maskImage: cv::Mat
objectLocation: cv::Rect
imageSize: cv::Size
objectDetected: bool

- imageArray : std::vector<std::vector<cv::Point>>

colorUpperLimit : const cv::ScalarcolorLowerrLimit : const cv::Scalar

+ convertedImage : cv::Mat

+ ObjectDetection()

+ ~ObjectDetection()

+ convertImage(const sensor_msgs::Image::ConstPtr&): void

+ detectObject(cv::Mat) : bool + applyGaussBlur(cv::Mat) : cv::Mat + getObjectBoundary() : cv::Rect + setObjectBoundary(cv::Rect) : void

+ getObjectDetected() : bool + setObjectDetected(bool) : void

ObstacleAvoidance

- nh : ros::NodeHandle

- subscibeSensor : ros::Subscriber

obstacleDetected : boollinearVelocity : float

+ ObstacleAvoidance()

+ ObstacleAvoidance(float): explicit

+ ~ObstacleAvoidance()

+ checkObstacle(): bool

+ setObstacleDetected(bool): void

+ getObstacleDetected(): bool

+ laserSensorCallback(const sensor msgs::LaserScan::ConstPtr&): void

TurtleBot

- nh : ros::NodeHandle

- velocities : geometry_msgs::Twist

- publishVelocities : ros::Publisher

- linearVelocity : float

- anguarVelocity : float

- prevLinearVelocity : float

- prevAngularVelocity : float

- publishRate : const int

+ Turtlebot()

+ Turtlebot(float, float)

+ ~Turtlebot()

+ moveForward(float): float

+ turn(float): float

+ moveBot(ObstacleAvoidance&): void

+ resetBot(): bool

+ checkVelocityChanged(): bool