

Workspace	Package	Subdirectories	Includes Files & Directory	Purpose of Include Files	Changes	Company Tag	
catkin_ws	Nox_robot	src	Arduino, CAD, docs, nox, nox_description	Essential for proper robot operation. Affects /cmd_vel.	Keep the file to avoid issue with robot control.	Yes	
catkin_ws	Nox_robot	src	solidworks/			Yes	
catkin_ws	costmap_converter	src	cfg, include, msg, src, test	A ROS package that includes plugins and nodes to convert occupied costmap2d cells to primitive type.	optimized the .h and .cpp files	Yes	
catkin_ws	audio_common	src	sound_play/action, include, msg, scripts, sounds, src, test	Related to audio processing in the robot.	No changes	Yes	
catkin_ws	follow_waypoints	src	lunch, nodes, readme_images, saved_path, src	Manages navigation through predefined waypoints.	A package that will buffer move_base goals until instructed to navigate to all waypoints in sequence.	Yes	
catkin_ws	x2_cartographer	src	bags, ydlidar	Used for mapping and localization (SLAM).	Used to create a demonstrator of using YDLIDAR X2 with Google Cartographer (when its deleted bot jumping from goal location).	Yes	
catkin_ws	Nox_robotnoX	src	cfg	rviz_amc_navigation.rviz, rviz_slam_base_local_planner.rviz, leb_local_planner.yaml	YAML files in ROS typically store configuration data such as parameters for different nodes, sensors.	modified yaml file	
catkin_ws	Nox_robotnoX	src	cfg1		YAML files in ROS typically store configuration data such as parameters for different nodes, sensors.	deletion of unnecessary configuration file.	
catkin_ws	hls_lfcd_lds_driver	src	application, include, launch, rviz, src, CHANGELOG.rst, CMakeLists.txt, LICENSE, package.xml	Includes drivers for a laser distance sensor, used for obstacle detection and mapping.	modified .cpp file	Yes	
catkin_ws	g2o	src	benchmarks, onmake_modules, doc, g2o, script, unit_test, approveor.yml, CMakeLists.txt, codecov.yml	Optimizing graph-based problems, commonly used in SLAM and other robotic applications.	update .cpp, .h, .xml files	Yes	
catkin_ws	move_base_flex	src	docs, mbf_abstract_core, mbf_abstract_nav, mbf_costmap_core, mbf_costmap_nav, mbf_msgs, mbf_simple_nav, mbf_utility, move_base_flex, gl-clang-format.py	Manages flexible navigation for the robot.	remove unnecessary contains	Yes	
catkin_ws	open_slamgmapping	src	build_tools, carmenwrapper, configfile, docs, gfs-carmen, grid, gridfastslam, gui, include, ini, log, navigation_msgs, particlefile, scanmatcher, sensor, utils	Generating a map of the robot's environment while localizing itself within the map (SLAM).	modified .cpp file	Yes	
catkin_ws	Ydlidar_ros_driver	src	images, launch, msg, src, startup, CMakeLists.txt, package.xml	Driver for YDLidar, a type of lidar sensor.	modified .cpp file	Yes	
catkin_ws	turtlebot	src	sounds, py		Turtlebot packages handle moving the robot towards a goal, which is part of the navigation stack.	after delete files are intact to avoid jumping behavior.	
catkin_ws	Navigation Layers	src	navigation_layers, range_sensor_layer, social_navigation_layers			Yes	
catkin_ws	relaxed_astar	src	launch, map, src, CMakeLists.txt, package.xml, relaxed_astar_planner	Pathfinding algorithm (for running in a straight path).	optimize .cpp and .h file	Yes	
catkin_ws	robotpose_ekf	src	images, include, scripts, src, srv, test, CMakeLists.txt, package.xml	Pose estimation using Extended Kalman Filter (EKF).	optimized the .h and .cpp files	Yes	
catkin_ws	Navigation	src	Audios, Coordinates, dependencies, navigation.py	Package for managing robot navigation, including localization, mapping, and planning.	optimized the .h and .cpp files	Yes	
catkin_ws	speed_odom	src	include, src, CMakeLists.txt, package.xml	Handles speed and essential for tracking the robot's position and velocity.	optimized the .h and .cpp files	Yes	
catkin_ws	turtlebot3	src	turtlebot3, turtlebot3_bringup, turtlebot3_description, turtlebot3_example, turtlebot3_navigation, turtlebot3_slam, turtlebot3_teleop	Managing the robot's basic functions and behaviors.	No changes	Yes	
catkin_ws	turtlebot3_deliver	src	turtlebot3_deliver, turtlebot3_deliver_core, turtlebot3_deliver_images, turtlebot3_deliver_psd, turtlebot3_deliver_service, turtlebot3_deliver_voice	ROS message definitions for TurtleBot3.	Its contains specific behaviors or scenarios for the robot to carry out delivery tasks.	No changes	
catkin_ws	turtlebot3_msgs	src	msgs, CMakeLists.txt, package.xml	Simulation package for TurtleBot3.	No changes	Yes	
catkin_ws	turtlebot3_simulations	src	turtlebot3_fake, turtlebot3_gazebo, turtlebot3_simulations	Serial communication for ROS and microcontrollers.	No changes	Yes	
catkin_ws	rosterial	src	rosterial, rosterial_arduino, rosterial_chibios, rosterial_client, rosterial_embeddedlinux, rosterial_mbed, rosterial_msgs, rosterial_python, rosterial_server, rosterial_test, rosterial_server			Yes	
catkin_ws	auto_clear_costmap	src	src, CMakeLists.txt, package.xml		Add Company Tag	Yes	