Bridge Gap Detection With OpenCV-Python and PyRealsense2

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Chapter 1

Namespace Index

1.1 Namespace List

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Chapter 2

Class Index

2.1 Class List

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Chapter 3

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3.1 File List

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Chapter 4

Namespace Documentation

4.1 Autopilot Namespace Reference

Classes

- class Autopilot

4.2 DroneKitTest Namespace Reference

Functions

- def arm_and_takeoff (tgt_altitude)

Variables

- parser = argparse.ArgumentParser(description='commands')
- args = parser.parse_args()
- connection_string = args.connect
- sitl = None
- vehicle = connect(connection_string, wait_ready=True)
- wp1 = LocationGlobalRelative(35.9872609, -80.8753037, 20)
- mode

4.2.1 Function Documentation

4.2.1.1 arm_and_takeoff()

```
def DroneKitTest.arm_and_takeoff (
              tgt_altitude )
```

4.2.2 Variable Documentation

4.2.2.1 args

```
DroneKitTest.args = parser.parse_args()
```

4.2.2.2 connection_string

```
DroneKitTest.connection_string = args.connect
```

4.2.2.3 mode

```
DroneKitTest.mode
```

4.2.2.4 parser

```
DroneKitTest.parser = argparse.ArgumentParser(description='commands')
```

4.2.2.5 sitl

```
DroneKitTest.sitl = None
```

4.2.2.6 vehicle

```
DroneKitTest.vehicle = connect(connection_string, wait_ready=True)
```

4.2.2.7 wp1

```
DroneKitTest.wp1 = LocationGlobalRelative(35.9872609, -80.8753037, 20)
```

4.3 Main Namespace Reference

Functions

- def pos_lr ()

Variables

- v = Viewer.Viewer()
- e1 = cv2.getTickCount()
- e2 = cv2.getTickCount()
- tuple time1 = (e2 - e1) / cv2.getTickFrequency()
- control = v.get_drone_control()
- phase = v.deployment_phase

4.3.1 Function Documentation

4.3.1.1 pos_lr()

```
def Main.pos_lr ( )
```

4.3.2 Variable Documentation

4.3.2.1 control

```
Main.control = v.get_drone_control()
```

4.3.2.2 e1

```
Main.e1 = cv2.getTickCount()
```

4.3.2.3 e2

```
Main.e2 = cv2.getTickCount()
```

4.3.2.4 phase

```
Main.phase = v.deployment_phase
```

4.3.2.5 time1

```
tuple Main.time1 = (e2 - e1) / cv2.getTickFrequency()
```

4.3.2.6 v

```
Main.v = Viewer.Viewer()
```

4.4 OLD_Viewer Namespace Reference

4.5 RLTEST Namespace Reference

Functions

- def arm_and_takeoff (secs)
- def send_ned_velocity (velocity_x, velocity_y, velocity_z, duration)

  Move vehicle in direction based on specified velocity vectors.

Variables

- parser = argparse.ArgumentParser(description='commands')
- args = parser.parse_args()
- connection_string = args.connect
- sitl = None
- vehicle = connect('/dev/cu.usbmodem1411', wait_ready=True, baud=115200)

4.5.1 Function Documentation

4.5.1.1 arm_and_takeoff()

```
def RLTEST.arm_and_takeoff (
              secs )
```

4.5.1.2 send_ned_velocity()

```
def RLTEST.send_ned_velocity (
              velocity_x,
              velocity_y,
              velocity_z,
              duration )
```

Move vehicle in direction based on specified velocity vectors.

4.5.2 Variable Documentation

4.5.2.1 args

```
RLTEST.args = parser.parse_args()
```

4.5.2.2 connection_string

```
RLTEST.connection_string = args.connect
```

4.5.2.3 parser

```
RLTEST.parser = argparse.ArgumentParser(description='commands')
```

4.5.2.4 sitl

```
RLTEST.sitl = None
```

4.5.2.5 vehicle

```
RLTEST.vehicle = connect('/dev/cu.usbmodem1411', wait_ready=True, baud=115200)
```

4.6 Viewer Namespace Reference

Classes

- class Viewer

  Class for the Realsense Viewe.

Chapter 5

Class Documentation

5.1 Autopilot.Autopilot Class Reference

Public Member Functions

- def __init__ (self)

5.1.1 Constructor & Destructor Documentation

5.1.1.1 __init__()

```
def Autopilot.Autopilot.__init__ (
              self )
```

The documentation for this class was generated from the following file:

- Autopilot.py

5.2 Viewer.Viewer Class Reference

Class for the Realsense Viewe.

Public Member Functions

- def __init__ (self)

  Contructor Function.
- def adapt_depth_clipping (self, depth_image)

  Function to implement adaptive depth clipping.
- def get_move_dir (self, lr_dir)

  Function to get the movement direction in the drone's flight phase.
- def get_drone_control (self)

  Function to get the drone control commands, dependent on the flight phase - either flying, or deploying.
- def canny_edge (self, image)

  Function to process the colour image.
- def check_z_orientation (self, centre)

  Function to check the orientation about the Z axis of the object being viewed.
- def get_dist_to_pillar (self, rect)

  Get the distance between the Realsense camera and the 'bridge support pillar'.
- def find_contours (self, edges)

  Function used to find the contours of the object being viewed.
- def get_deployment_dir_to_move (self, c_x, c_y)

  Gets the direction for the drone to move in the deployment phase.
- def get_deployment_coords (self, tl, tr, bl, br, gap_rect, full_rect)

  Gets the coordinates of the internal contour in the deployment phase.
- def scale_internal_contour (self, centre, dims)

  Function used to verify the points of the internal contour for deployment.
- def verify_deployment_area (self, shrunk_points)

  Function to verify whether the edges of the internal contour cross any point of the surrounding support structure.
- def separate_contours (self, contours, hierarchy)

  Takes in the full contour list, alongside heirarchy and separates these into internal and external contours.
- def draw_roi (self, box, theta)

  Draws a region of interest (ROI) above the pillar if no 'gap' is detected.
- def shift_line_y_t (self, point1, point2, avg_ty)

  Shifts the top line of the internal gap contour in the nevative y direction.
- def shift_line_y_b (self, point1, point2, avg_by)

  Shifts the bottom line of the internal gap contour in the positive y direction.
- def shift_line_x_r (self, point1, point2, avg_rx)

  Shifts the right hand line of the internal gap contour in the positive x direction.
- def shift_line_x_l (self, point1, point2, avg_lx)

  Shifts the left hand line of the internal gap contour in the nevative x direction.
- def deproj_to_pt (self, point1, point2)

  Deprojects the pixel data into 3D point data with reference to the camera position.
- def update (self)

  Update function which runs all of the required functionality of the script and draws all required objects to the screen.
- def get_x_dist (self, mid, wh, theta)

  Function to get the direction that the drone is required to move in, only in the x-direction.
- def get_colour (self, x, y)

  Function to get the BGR colour values at specified pixel.
- def get_line_eq (self, ln1, ln2)

  Function to calculate the equations of two lines.
- def intersection (self, ln1, ln2)

  Uses Cramer's Rule to find the intersection point of two lines.
- def show_window (self)

  Function used to show the 'Realsense' window and the 'Edge' window 'Realsense' - Shows processed image with all drawn contours and eliminated background, next to the colourised depth stream.

Public Attributes

- pipeline
- screen_width
- screen_height
- profile
- align
- colouriser
- decimation
- spatial
- temporal
- hole_filling
- depth_to_disparity
- disparity_to_depth
- depth_scale
- dead_points
- active_contours
- clipping_dist
- dead_space
- pillar_detected
- verified_deployment_area
- deployment_phase
- pre_deploy_dir
- direction_to_move
- distance_to_move
- distance_from_pillar
- deployment_area_coordinates
- deployment_dir_to_move
- internal_contour
- external_contour
- contour_shrink_sf
- deploy_tl
- deploy_tr
- deploy_bl
- deploy_br
- deployment_area_distances_mm
- aligned_depth_frame
- colour_frame
- colourised_filtered_depth
- colour_image
- depth_intrin
- colour_intrin
- depth_colour_extrin
- bg_removed
- edges
- images

5.2.1 Detailed Description

Class for the Realsense Viewe.

5.2.2 Constructor & Destructor Documentation

5.2.2.1 __init__()

```
def Viewer.Viewer.__init__ (
              self )
```

Contructor Function.

5.2.3 Member Function Documentation

5.2.3.1 adapt_depth_clipping()

```
def Viewer.Viewer.adapt_depth_clipping (
              self,
              depth_image )
```

Function to implement adaptive depth clipping.

Takes in the nearest object's depth and eliminated background behind this with a 20% tolerance.

5.2.3.2 Parameters

depth_image: The image data of the depth stream from the Realsense camera.

5.2.3.3 Returns

closest_object_tol: The distance of the closes object (+20%) tolerance in metres.

5.2.3.4 canny_edge()

```
def Viewer.Viewer.canny_edge (
              self,
              image )
```

Function to process the colour image.

Takes in colour image data and outputs image edge data, in a BW thresholded format.

5.2.3.5 Parameters

image: The colour image data to be processed.

5.2.3.6 Returns

edges: The edge data to be used in subsequent processing functions.

5.2.3.7 check_z_orientation()

```
def Viewer.Viewer.check_z_orientation (
              self,
              centre )
```

Function to check the orientation about the Z axis of the object being viewed.

Outputs a visual of the orientation of the object relative to the horizontal.

5.2.3.8 Parameters

centre: Centre point of the contour of the object.

5.2.3.9 deproj_to_pt()

```
def Viewer.Viewer.deproj_to_pt (
              self,
              point1,
              point2 )
```

Deprojects the pixel data into 3D point data with reference to the camera position.

Used to find the distances between pixels in millimetres.

5.2.3.10 Parameters

point1: The first point of the line for which the distance is required to be measured. point2: The second point of the line for which the distance is required to be measured.

5.2.3.11 Returns

[dx, dy, dz]: A list of the x, y and z distances between the two points in millimetres.

5.2.3.12 draw_roi()

```
def Viewer.Viewer.draw_roi (
              self,
              box,
              theta )
```

Draws a region of interest (ROI) above the pillar if no 'gap' is detected.

Essentially detects the top edge of the pillar.

5.2.3.13 Parameters

box: The external contour box coordinates theta: The angle of rotation of the box through the y-axis.

5.2.3.14 Returns

[t_l_, t_r_, p_l, p_r, t_l, t_r, b_l, b_r]: A list of the deployable coordinates, given that the ROI is a verified deployment area.

5.2.3.15 find_contours()

```
def Viewer.Viewer.find_contours (
              self,
              edges )
```

Function used to find the contours of the object being viewed.

Contains operations to calculate the outer contour and inner contour, and also draws the contours on the screen, and processes contour data to output multiple variables, including the deployment phase and some movement directions.

5.2.3.16 Parameters

edges: The edge data from the canny_edge() function.

5.2.3.17 Returns

box: Box object containing coordinates of the four corners of the bounding contour box. rect: List containing the centre point of the contour, the height and width of the contour, and the angle of rotation through the y-axis (into/out of the screen). contours_int: Contours object containing all internal contour data.

5.2.3.18 get_colour()

```
def Viewer.Viewer.get_colour (
              self,
              x,
              y )
```

Function to get the BGR colour values at specified pixel.

(0, 0, 0) corresponds to an inactive pixel.

5.2.3.19 Parameters

x: X-coordinate of pixel. y: Y-coordinate of pixel.

5.2.3.20 Returns

(B, G, R): Tuple containing (B, G, R) colour data (Blue, Green, Red), between 0 and 255.

5.2.3.21 get_deployment_coords()

```
def Viewer.Viewer.get_deployment_coords (
              self,
              tl,
              tr,
              bl,
              br,
              gap_rect,
              full_rect )
```

Gets the coordinates of the internal contour in the deployment phase.

Shrinks the contour to output verified coordinates so that the drone does not attempt to deploy directly against one of the dap's edges.

5.2.3.22 Parameters

tl: Original top-left coordinate of contour. tr: Original top-right coordinate of contour. bl: Original bottom-left coordinate of contour. br: Original bottom-right coordinate of contour. gap_rect: The rect data (midpoint, width, height and theta) of the gap contour. full_rect: The rect data (midpoint, width, height and theta) of the main object contour.

5.2.3.23 Returns

self.deployment_area_coordinates: List of verified coordinates for the drone to deploy the ground robot within.

5.2.3.24 get_deployment_dir_to_move()

```
def Viewer.Viewer.get_deployment_dir_to_move (
              self,
              c_x,
              c_y )
```

Gets the direction for the drone to move in the deployment phase.

Outputs a Dict object with {direction to move : coordinates of movement}

5.2.3.25 Parameters

c_x: Centre point x coordinate of the internal (gap) contour. c_y: Centre point y coordinate of the internal (gap) contour.

5.2.3.26 get_dist_to_pillar()

```
def Viewer.Viewer.get_dist_to_pillar (
              self,
              rect )
```

Get the distance between the Realsense camera and the 'bridge support pillar'.

Outputs the distance to the target in millimetres.

5.2.3.27 Parameters

rect: List containing the centre point of the contour, the height and width of the contour, and the angle of rotation through the y-axis (into/out of the screen).

5.2.3.28 Returns

dist: Distance to the viewed object in millimetres.

5.2.3.29 get_drone_control()

```
def Viewer.Viewer.get_drone_control (
              self )
```

Function to get the drone control commands, dependent on the flight phase - either flying, or deploying.

Outputs the direction in which the drone needs to move, dependent on the phase of flight.

5.2.3.30 Returns

self.pre_deploy_dir: Dictionary containing key: direction for the drone to move, value: number of pixels away from centre.

self.deployment_dir_to_move: Deployment direction if in deployment phase.

5.2.3.31 get_line_eq()

```
def Viewer.Viewer.get_line_eq (
              self,
              ln1,
              ln2 )
```

Function to calculate the equations of two lines.

In form a0x + b0y = c0 (1) & a1x + b1y = c1 (2).

5.2.3.32 Parameters

ln1: Line one start and end coordinates. ln2: Line two start and end coorinates.

5.2.3.33 Returns

[a0, b0, c0, a1, b1, c1]: List of the two lines, to be used in the above format of equations (1) & (2).

5.2.3.34 get_move_dir()

```
def Viewer.Viewer.get_move_dir (
              self,
              lr_dir )
```

Function to get the movement direction in the drone's flight phase.

Takes input directions and outputs readable control commands.

5.2.3.35 Parameters

lr_dir: Move left, right or centred command received from the get_x_dist() function.

5.2.3.36 Returns

self.pre_deploy_dir: Dictionary containing key: direction for the drone to move, value: number of pixels away from centre.

5.2.3.37 get_x_dist()

```
def Viewer.Viewer.get_x_dist (
              self,
              mid,
              wh,
              theta )
```

Function to get the direction that the drone is required to move in, only in the x-direction.

Outputs the direction and distance in pixels to move.

5.2.3.38 Parameters

mid: Midpoint of the input contour. wh: Width and height of the input contour. theta: Angle of rotation through the object y-axis of the object.

5.2.3.39 Returns

dir: Direction of required movement of the drone. dx: Number of pixels required to be moved.

5.2.3.40 intersection()

```
def Viewer.Viewer.intersection (
              self,
              ln1,
              ln2 )
```

Uses Cramer's Rule to find the intersection point of two lines.

Outputs the intersection point. Generally used in conjunction with get_line_eq().

5.2.3.41 Parameters

ln1: Line one input. ln2: Line two input.

5.2.3.42 Returns

intercept: Intersection point of line one and line two.

5.2.3.43 scale_internal_contour()

```
def Viewer.Viewer.scale_internal_contour (
              self,
              centre,
              dims )
```

Function used to verify the points of the internal contour for deployment.

Scales contour with respect to whether or not it is verified as a proper area of deployment.

5.2.3.44 Parameters

centre: Centre point of internal contour. dims: Width and height of internal contour.

5.2.3.45 Returns

tl: Scaled top-left coordinate. tr: Scaled top-right coordinate. bl: Scaled bottom-left coordinate. br: Scaled bottom-right coordinate

5.2.3.46 separate_contours()

```
def Viewer.Viewer.separate_contours (
              self,
              contours,
              hierarchy )
```

Takes in the full contour list, alongside heirarchy and separates these into internal and external contours.

Outputs independedt internal and external contour lists.

5.2.3.47 Parameters

contours: The full list of all detected contours in the colour image. hierarchy: The hierarchy of the contours: i.e. If they are internal (having parent contours) or external (having no parent contours and being the initial of the group).

5.2.3.48 Returns

int_cnt: Internal contour list. ext_cnt: External contour list.

5.2.3.49 shift_line_x_l()

```
def Viewer.Viewer.shift_line_x_l (
              self,
              point1,
              point2,
              avg_lx )
```

Shifts the left hand line of the internal gap contour in the nevative x direction.

Outputs a set of shifted coordinates.

5.2.3.50 Parameters

point1: The first point of the internal gap contour left hand line. point2: The second point of the internal gap contour left hand line.

5.2.3.51 Returns

(pt1_x, pt1_y): Tuple containing x and y coordinates of shifted point 1. (pt2_x, pt2_y): Tuple containing x and y coordinates of shifted point 2.

5.2.3.52 shift_line_x_r()

```
def Viewer.Viewer.shift_line_x_r (
              self,
              point1,
              point2,
              avg_rx )
```

Shifts the right hand line of the internal gap contour in the positive x direction.

Outputs a set of shifted coordinates.

5.2.3.53 Parameters

point1: The first point of the internal gap contour right hand line. point2: The second point of the internal gap contour right hand line.

5.2.3.54 Returns

(pt1_x, pt1_y): Tuple containing x and y coordinates of shifted point 1. (pt2_x, pt2_y): Tuple containing x and y coordinates of shifted point 2.

5.2.3.55 shift_line_y_b()

```
def Viewer.Viewer.shift_line_y_b (
              self,
              point1,
              point2,
              avg_by )
```

Shifts the bottom line of the internal gap contour in the positive y direction.

Outputs a set of shifted coordinates.

5.2.3.56 Parameters

point1: The first point of the internal gap contour bottom line. point2: The second point of the internal gap contour bottom line.

5.2.3.57 Returns

(pt1_x, pt1_y): Tuple containing x and y coordinates of shifted point 1. (pt2_x, pt2_y): Tuple containing x and y coordinates of shifted point 2.

5.2.3.58 shift_line_y_t()

```
def Viewer.Viewer.shift_line_y_t (
              self,
              point1,
              point2,
              avg_ty )
```

Shifts the top line of the internal gap contour in the nevative y direction.

Outputs a set of shifted coordinates.

5.2.3.59 Parameters

point1: The first point of the internal gap contour top line. point2: The second point of the internal gap contour top line.

5.2.3.60 Returns

(pt1_x, pt1_y): Tuple containing x and y coordinates of shifted point 1. (pt2_x, pt2_y): Tuple containing x and y coordinates of shifted point 2.

5.2.3.61 show_window()

```
def Viewer.Viewer.show_window (
              self )
```

Function used to show the 'Realsense' window and the 'Edge' window 'Realsense' - Shows processed image with all drawn contours and eliminated background, next to the colourised depth stream.

'Edge' - Shows thresholded edge detection image.

5.2.3.62 update()

```
def Viewer.Viewer.update (
              self )
```

Update function which runs all of the required functionality of the script and draws all required objects to the screen.

Called every time the screen updates.

5.2.3.63 verify_deployment_area()

```
def Viewer.Viewer.verify_deployment_area (
              self,
              shrunk_points )
```

Function to verify whether the edges of the internal contour cross any point of the surrounding support structure.

If the edges do cross the structure, the drone cannot deploy as it will collide with pillar. If they do not, then there is a verified empty space for the drone to deploy the ground robot within.

5.2.3.64 Parameters

shrunk_points: The shrunken inner contour of the gap.

5.2.4 Member Data Documentation

5.2.4.1 active_contours

```
Viewer.Viewer.active_contours
```

5.2.4.2 align

```
Viewer.Viewer.align
```

5.2.4.3 aligned_depth_frame

Viewer.Viewer.aligned_depth_frame

5.2.4.4 bg_removed

Viewer.Viewer.bg_removed

5.2.4.5 clipping_dist

Viewer.Viewer.clipping_dist

5.2.4.6 colour_frame

Viewer.Viewer.colour_frame

5.2.4.7 colour_image

Viewer.Viewer.colour_image

5.2.4.8 colour_intrin

Viewer.Viewer.colour_intrin

5.2.4.9 colourised_filtered_depth

Viewer.Viewer.colourised_filtered_depth

5.2.4.10 colouriser

Viewer.Viewer.colouriser

5.2.4.11 contour_shrink_sf

Viewer.Viewer.contour_shrink_sf

5.2.4.12 dead_points

Viewer.Viewer.dead_points

5.2.4.13 dead_space

Viewer.Viewer.dead_space

5.2.4.14 decimation

Viewer.Viewer.decimation

5.2.4.15 deploy_bl

Viewer.Viewer.deploy_bl

5.2.4.16 deploy_br

Viewer.Viewer.deploy_br

5.2.4.17 deploy_tl

Viewer.Viewer.deploy_tl

5.2.4.18 deploy_tr

Viewer.Viewer.deploy_tr

5.2.4.19 deployment_area_coordinates

Viewer.Viewer.deployment_area_coordinates

5.2.4.20 deployment_area_distances_mm

Viewer.Viewer.deployment_area_distances_mm

5.2.4.21 deployment_dir_to_move

Viewer.Viewer.deployment_dir_to_move

5.2.4.22 deployment_phase

Viewer.Viewer.deployment_phase

5.2.4.23 depth_colour_extrin

Viewer.Viewer.depth_colour_extrin

5.2.4.24 depth_intrin

Viewer.Viewer.depth_intrin

5.2.4.25 depth_scale

Viewer.Viewer.depth_scale

5.2.4.26 depth_to_disparity

Viewer.Viewer.depth_to_disparity

5.2.4.27 direction_to_move

Viewer.Viewer.direction_to_move

5.2.4.28 disparity_to_depth

Viewer.Viewer.disparity_to_depth

5.2.4.29 distance_from_pillar

Viewer.Viewer.distance_from_pillar

5.2.4.30 distance_to_move

Viewer.Viewer.distance_to_move

5.2.4.31 edges

Viewer.Viewer.edges

5.2.4.32 external_contour

Viewer.Viewer.external_contour

5.2.4.33 hole_filling

Viewer.Viewer.hole_filling

5.2.4.34 images

Viewer.Viewer.images

5.2.4.35 internal_contour

Viewer.Viewer.internal_contour

5.2.4.36 pillar_detected

Viewer.Viewer.pillar_detected

5.2.4.37 pipeline

Viewer.Viewer.pipeline

5.2.4.38 pre_deploy_dir

Viewer.Viewer.pre_deploy_dir

5.2.4.39 profile

Viewer.Viewer.profile

5.2.4.40 screen_height

Viewer.Viewer.screen_height

5.2.4.41 screen_width

Viewer.Viewer.screen_width

5.2.4.42 spatial

Viewer.Viewer.spatial

5.2.4.43 temporal

```
Viewer.Viewer.temporal
```

5.2.4.44 verified_deployment_area

```
Viewer.Viewer.verified_deployment_area
```

The documentation for this class was generated from the following file:

- Viewer.py

Chapter 6

File Documentation

6.1 Autopilot.py File Reference

Classes

- class Autopilot.Autopilot

Namespaces

- Autopilot

6.2 DroneKitTest.py File Reference

Namespaces

- DroneKitTest

Functions

- def DroneKitTest.arm_and_takeoff (tgt_altitude)

Variables

- DroneKitTest.parser = argparse.ArgumentParser(description='commands')
- DroneKitTest.args = parser.parse_args()
- DroneKitTest.connection_string = args.connect
- DroneKitTest.sitl = None
- DroneKitTest.vehicle = connect(connection_string, wait_ready=True)
- DroneKitTest.wp1 = LocationGlobalRelative(35.9872609, -80.8753037, 20)
- DroneKitTest.mode

6.3 Main.py File Reference

Namespaces

- Main

Functions

- def Main.pos_lr ()

Variables

- Main.v = Viewer.Viewer()
- Main.e1 = cv2.getTickCount()
- Main.e2 = cv2.getTickCount()
- tuple Main.time1 = (e2 - e1) / cv2.getTickFrequency()
- Main.control = v.get_drone_control()
- Main.phase = v.deployment_phase

6.4 OLD_Viewer.py File Reference

Namespaces

- OLD_Viewer

6.5 RLTEST.py File Reference

Namespaces

- RLTEST

Functions

- def RLTEST.arm_and_takeoff (secs)
- def RLTEST.send_ned_velocity (velocity_x, velocity_y, velocity_z, duration)

  Move vehicle in direction based on specified velocity vectors.

Variables

- RLTEST.parser = argparse.ArgumentParser(description='commands')
- RLTEST.args = parser.parse_args()
- RLTEST.connection_string = args.connect
- RLTEST.sitl = None
- RLTEST.vehicle = connect('/dev/cu.usbmodem1411', wait_ready=True, baud=115200)

6.6 Viewer.py File Reference

Classes

- class Viewer.Viewer

  Class for the Realsense Viewe.

Namespaces

- Viewer