GSML Calibration and Usage

Files required available at:

github.com/stef-andonov/nUWAy-CITS3200

Python Dependencies:

- rclpy
- sensor_msgs
- cv_bridge
- opencv-python

ROS 2 Build/Execution Dependencies:

- rclpy
- sensors_msgs
- cv_bridge
- opencv4

Calibration

1. Pull GitHub repository using:
   git clone https://github.com/stef-andonov/nUWAy-CITS3200.git

2. Execute in the source directory:

   colcon build

3. Source install/setup.bash after building.

4. Run publisher node of camera with:
   ros2 run gsml gsml_publisher

5. Then, run subscriber to take pictures for calibration of the, use CTRL+C when enough pictures are taken. By default, ‘pictures’ is the directory created with the calibration images:
   ros2 run gsml gsml_subscriber

6. Finally, run calibration node to obtain calibration information as a text file.
   ros2 run gsml gsml_calibrate <calibration_images_folder>
   <chessboard_width – 1> <chessboard_height – 1> <square_size_mm>

Usage

1. After calibration there should be a text file called ‘camera_calibration_results.txt’. This contains the information to undistort the fisheye GSML camera. Run the publisher to publish the undistorted video frames:
   ros2 run gsml gsml_publisher