(T_{LR}) $O_L O_R$ is known

R_{LR} is known : $\underline{X_L, X_R}$: bearing vectors obtained by unprojecting
detected 2D image points

$\therefore$ According to rigid body transformation

$$X_L = R_{LR} X_R + T_{LR}$$

$$\Big\downarrow \text{ crossproduct } T_{LR}$$

$$T_{LR} \times X_L = T_{LR} \times (R_{LR} X_R)$$

$$\Big\downarrow \text{ dot product } X_L$$

$$0 = \underline{X_L^T (T_{LR} \times X_L)} = X_L^T \hat{T}_{LR} R_{LR} X_R$$

skew symmetric

$$\therefore \begin{cases} X_L^T \hat{T}_{LR} R_{LR} X_R = 0 \\ X_L^T E X_R = 0 \end{cases} \Rightarrow E = \hat{T}_{LR} R_{LR} = \widehat{O_L O_R} R_{LR}$$

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Part 4:

1° main difference between match_all, match_bow:

match_all use brute force to find all matches. e.g. {frame2, frame1}

{frame3, frame2}. {frame3, frame1} ....

However, match_bow will first read the bow vocabulary, then for each frame to find its bow-vector, then query that in bow-db to find the matches.

2° num_bow_candidates: restrict how many matches at most it will add 25

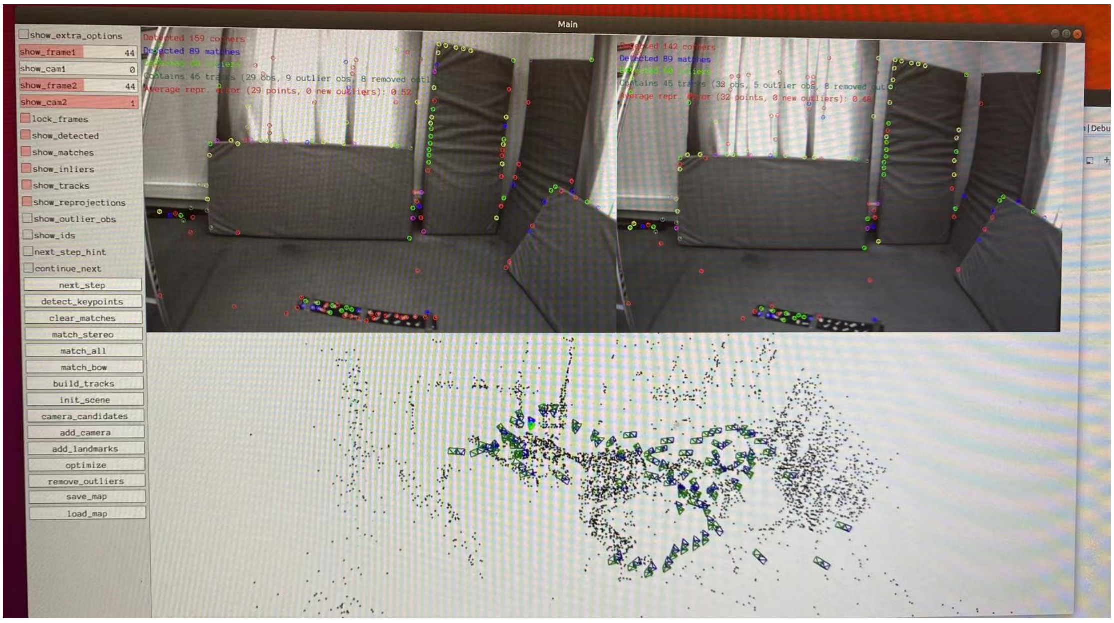
in code $k <$ min(result_raw.size(), num_bow_candidates)

3° After implementing. in our case we have 2×82 images.

then for 2×1000 images: set N = average corner of one image

2×82 images:

∴ 2×1000×N×25


Main
show_extra_options
show_frame1
44
show_cam1
0
show_frame2
44
show_cam2
1
lock_frames
show_detected
show_matches
show_inliers
show_tracks
show_reprojections
show_outlier_obs
show_ids
next_step_hint
continue_next
next_step
detect_keypoints
clear_matches
match_stereo
match_all
match_bow
build_tracks
init_scene
camera_candidates
add_camera
add_landmarks
optimize
remove_outliers
save_map
load_map
Detected 89 matches
Detected 89 matches