

Localization capability demonstration in Dense Urban Scenario During Peak Hours

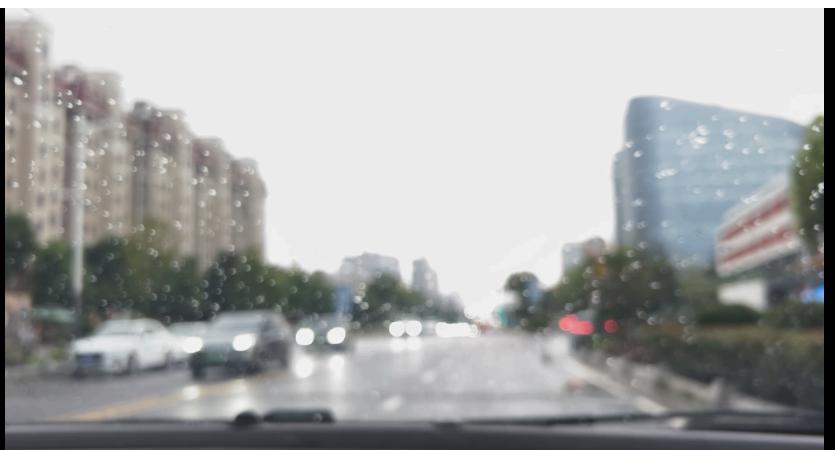
#5288

liuXinGangChina started this conversation in Show and tell

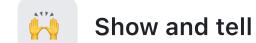
liuXinGangChina on Sep 29 Collaborator edited ▾

Test condition

1. Autoware Version: 2024.07.17
2. Docker Version: Official Docker 2024.08
3. Launch file: Logging_simulator.launch (only localization and related module been pulled up)
4. Rosbag: Lidar Ouster os1-64-U (mode 1024x10)
5. Traffic status: Rush hour (9.00 am)
6. Traffic Participants: e-bike, bike, motorcycle, bus, truck, car, pedestrian
7. Test route Distance: 5km
8. Duration: 16 minutes
9. Route elements: more than 10 crossroads and zebra crossing, pass through hybrid road which shared by bike and car



Category



Show and tell

Labels

component:localiza...

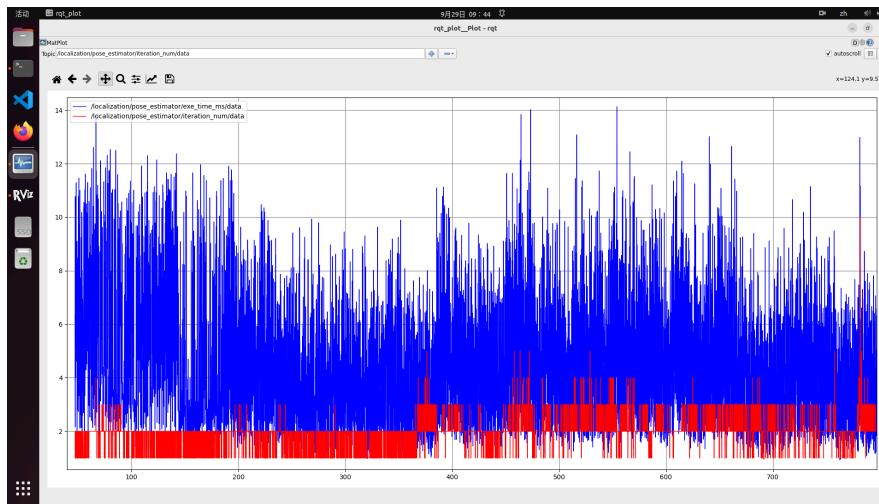
3 participants



Test result

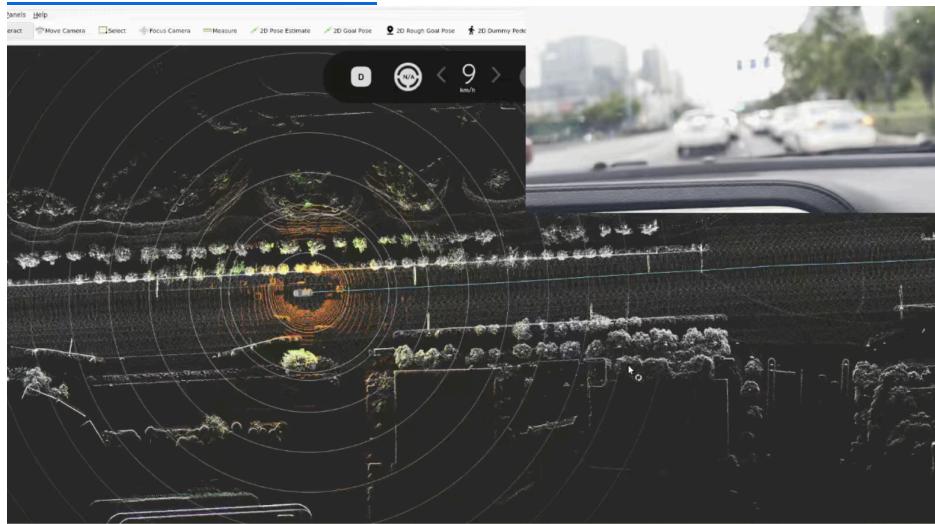
1. Localization pipeline works well under different scenarios, localization failure or crush not detected
2. Path filtered by ekf is smooth and continuous
3. NDT's exec time:
 - i. Average: 3ms

ii. Max: 14ms



4. Rviz screen cast: including localization visualization, dash cam video

[click here to watch the video](#)



5. we also compare the localization pipeline's performance between sunny day and rainy day

Weather	Ndt_calculate_time	video link
Rainy	3-14ms	click here to watch the video
Sunny	3-10 ms	click here to watch the video

↑ 3 4

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liuXinGangChina on Oct 9

Collaborator

Author

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further comparison between different scenarios

↑ 1

2 replies



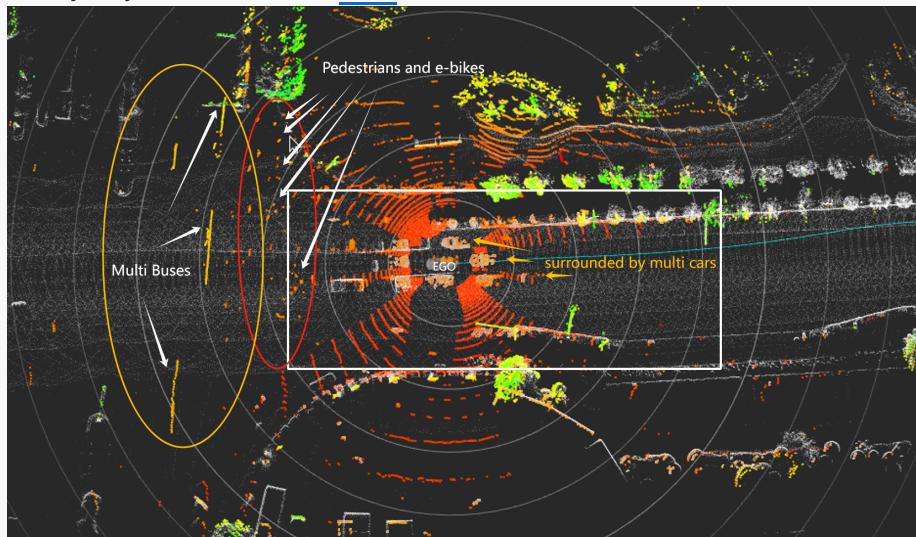
liuXinGangChina on Oct 16

Collaborator

Author

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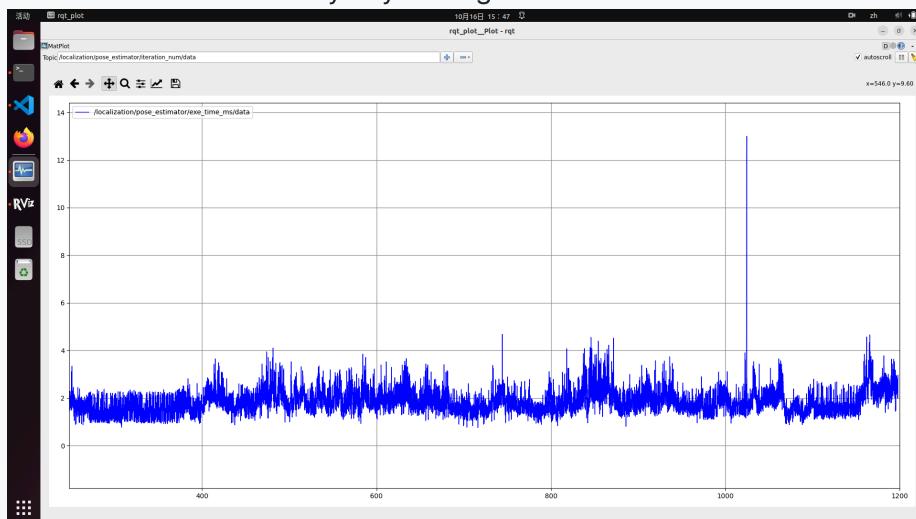
We also test the ndt based localization pipeline during peak hour in sunny day test result is [here](#)



So far we have tested localization pipeline in sunny and rainy days during peak hour while the map is built in common days

it turn out to that there are no significant difference in calculation time between two weather types

the only difference between those two is during rainy days when ego turn at the road cross the max exec-time of ndt increase a little from 10 ms to 14ms than sunny day driving



 **Intsh854** 2 weeks ago

Your NDT calculation time is only a few to tens of milliseconds, which is very fast. May I ask what your computing platform is, and what algorithm optimizations have been made compared to the original version of Autoware?



villaoningfootball last week Collaborator

Did you verify it on a passenger car

↑ 1

0 replies