

What is the current development state of RADAR functionality? #3075

 Closed

 Answered by MarioAlmelaUMH

MarioAlmelaUMH asked this question in Q&A



MarioAlmelaUMH on Nov 29, 2022

While I was searching through Autoware.universe's perception module documentation files, I saw multiple nodes referring to RADAR data, like this one:

https://github.com/autowarefoundation/autoware.universe/tree/main/perception/radar_fusion_to_detected_object

I have seen that some packages and files were edited 4 days previous to the writing of this message. Is RADAR functionality fully implemented or what is its actual status and timeplan of development?

Thank you in advance.

↑ 3

Category



Q&A

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Answered by **MarioAlmelaUMH** on Jan 13, 2023

[@scepter914](#) any feedback?

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MarioAlmelaUMH on Jan 13, 2023

Author

[@scepter914](#) any feedback?



Marked as answer

↑ 2

4 replies



scepter914 on Jan 17, 2023

Collaborator

[@MarioAlmelaUMH](#)

I'm sorry for the late reply.
I share radar development status in TIER IV.
If you have any questions, please feel free to ask.
Thank you.

Current status for radar objects pipeline

- [msgs convertor](#)
- [radar fusion](#)
 - Fusion between objects based on radar outputs and objects based on LiDAR detection.
 - Attach velocity information from radar to Detected objects.
 - Improve the low confidence of detected objects.
- A temporary radar fusion pipeline is implemented. Related launch files are [lidar_radar_based_detection.launch.xml](#) and [radar_based_detection.launch.xml](#).

Current status for radar pointcloud pipeline

- According [this proposal](#), we made the prototype package for radar pointcloud as below
 - https://github.com/autowarefoundation/autoware.universe/tree/main/sensing/radar_scan_to_pointcloud2
 - https://github.com/autowarefoundation/autoware.universe/tree/main/sensing/radar_static_pointcloud_filter
 - https://github.com/autowarefoundation/autoware.universe/tree/main/sensing/radar_threshold_filter
- We made radar detection package (Input: radar pointcloud, Output: Detected objects) as a trial, but it's not yet at a level to publish.

Future development

- Camera-Radar fusion

Now we try Camera-Radar fusion, especially Camera-Radar BEV fusion like [Simple-BEV](#), but the specific time plan is undecided.

- LiDAR-Radar fusion

We will try LiDAR-Radar fusion to see long distance (100m over). The inputs of this LiDAR-Radar fusion will be objects based on radar outputs and LiDAR pointcloud.

The fusion package estimate object shape from pointcloud information for distant objects detected by radar.



MarioAlmelaUMH on Jan 17, 2023 Author

Ok, thank you for your answer, さん. ありがとうございます.



damodarRohit on Sep 15, 2023

Is there any update on any of the Future development or any plan to publish the 'radar detection package (Input : pointcloud, Output : detected objects)'? I came across the Radar detection pipeline activity in this thread

[<https://github.com/orgs/autowarefoundation/discussions/3654>] but I am not able to see the Slides attached or any related meeting notes.



scepter914 on Sep 27, 2023 Collaborator

edited ▼

TIER IV focus on finding a radar device with better performance now and plan to use radars by not pointcloud publish mode but object publish mode.

We tried ML-based radar detection like SimpleBEV, but it did not work now because of low accuracy from radar information.

So for now, unfortunately, there is no plan to make radar detection package (Input : radar pointcloud, Output : detected objects).



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Answer selected by **MarioAlmelaUMH**



cycyc1949 on Nov 17, 2023 Collaborator

Image and lidar fusion is a good idea, and in order to achieve this, the current perception framework may need to be changed, and hopefully the camera and lidar fusion framework will also be implemented faster.



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0 replies