

Perception and Sensing WG Meeting

06/09/2023 #3812

drwnz started this conversation in **Working group meetings**



drwnz on Sep 6, 2023

Collaborator

edited ▾

Administrative

- [Previous meeting](#)
- **Meeting time:** Every second Wednesday, 10am UTC (alternating with Mapping WG)
- [WG Google Drive](#)

Attendees

- ▼ Chaired by David
- Shunsuke Miura
 - Ryohsuke Mitsudome
 - Dai Nguyen
 - Fatih Cirit
 - Yusuke Muramatsu
 - Kaan Colak
 - Kenzo Lobos
 - David Walmroth
 - Mehmet Basoglu
 - Tony Cai
 - Benjamin Gilby
 - Alexey Panferov

Agenda

- Introduction of new attendees
- Discussion on **Downloading artifacts outside of CMake** from Alexey
- Progress report on **Nebula** from David
- Progress report on **ROI pointcloud fusion for small objects detection** from Dai
- Review of [Project Board](#) and assignment

Discussion topics

- Discussion on Downloading artifacts outside of CMake

Category



Working group meetings

Labels

meeting:sensing-p...

1 participant



- Addressing [🔗 Move downloading artifacts outside CMake](#) [autoware.universe#3137](#)
- Started with initiative from creating packages with Autoware, which had a rule for downloading objects for security reasons
- Decision for now is to create a folder in the system
- Ansible: what happens when updating rather than running first time?
 - Not currently mentioned in discussion
 - Also the case when you have several vehicles should also be considered
- Progress report on [Nebula](#)
 - PRs and issues from LeoDrive:
 - [🔗 perf: unpack velodyne packets in parallel](#) [tier4/nebula#62](#)
 - Fatih - producer consumer pattern would be good
 - Queue for input
 - STL vs Open MP - external library required so choosing compatibility at compile time is best
 - Fatih: using STL is preferred, also has support on ARM: <https://docs.nvidia.com/hpc-sdk/compilers/c++-parallel-algorithms/index.html>
 - [🔗 Enhancement: Add Ring-Based Filter for Removing Reflected and Vehicle Points](#) [tier4/nebula#60](#)
 - Have implementation for Velodyne, will PR
 - PR from Robosense: [🔗 feat: support robosense lidar](#) [tier4/nebula#54](#)
 - PR from Innoviz: [🔗 feat: \(Support Innoviz Two\)](#) [tier4/nebula#66](#)
 - Issue from TIER IV: [🔗 Parameters: align with Autoware Foundation proposal for ROS nodes](#) [tier4/nebula#63](#)
- Progress report on ROI pointcloud fusion for small objects detection
 - Addressing [🔗 roi pointcloud fusion for small objects detection](#) [autoware.universe#4680](#)
 - David: how small objects does it detect? Dai: current parametrization is with 2 points, mostly depends on YOLO model detection ability
 - Time penalty: maybe 3ms increase in delay time
 - Miura: Have you checked how many objects are in the camera lidar clusters topic? Dai: Maybe less than 10 objects
 - Previously, no result from pointcloud because too few points to cluster
 - LeoDrive has similar issues for poles, but currently overcome by fixing minimum IoU: see <https://github.com/orgs/autowarefoundation/discussions/3744>
 - David: would this detect a piece of paper? Dai: If it's showing in camera-lidar fusion then maybe, but if it's fast moving it might be lost in tracking
- Discussion on ground removal issue: [🔗 ground remover package cannot delete ghost points appears front of car when passing speedbump](#) [autoware.universe#3673](#)
 - Currently they are using 35cm cut for ground filter, which is too much to detect some cats etc
 - David; IMU suggestion? Kaan: did not work well

- David: has anything be tried to fix? Kaan: so far tried to change position of filter when going over speedbump
- Dai; How about compare map filter? Fatih: we don't want to use compare map filter, perception shouldn't rely on map.
- Miura: When perception performance is better we can reduce dependency on compare_map
- Dai can also propose using semantic segmentation results, Fatih: image based is not very reliable, priority is using LiDAR scan data and prior information

- Project board

Action items

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0 comments