Autoware Sensing Perception Working Group Meeting 2024-09-04 #5167

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

drwnz on Sep 4 Collaborator edited

Administrative

- Previous meeting
- **Meeting time:** Every second Wednesday, 10am UTC (alternating with Mapping WG)
- WG Google Drive
- Wiki page for this Working Group
- Shared issue list

Attendees

▼ Chaired by David

- Koji
- Amadeusz
- Fatih
- Max
- Shintaro
- Vivid
- Ryohsuke

Agenda

- Introduction of new attendees
- Review of Issue List and assignment
- Review of Project Board and assignment

Discussion topics

- Announcements
- Review of Project Board and assignment
  - One automated workflow is unavaialbe, but generally using project board
  - One issue report about performance measurement

Category

Working group meetings

Labels

meeting:sensing-p...

1 participant

- Statistics of latest Autoware's Whole Perception Pipeline Latency (Lidar only mode) autoware.universe#8752
  - Fatih: reaction analyzer tool: https://github.com/brkay54/autoware.universe/tree/feat/reaction-measure-tool/tools/reaction_analyzer
  - This has been merged for analyzing end-to-end latency in the pipeline
  - This can also be helpful to understand background: feat(pointcloud_preprocessor): add pipeline latency time debug information for pointcloud pipeline autoware.universe#6056
  - Max: depending on how system and sensor clocks might introduce issues. Might be better to take the time at the start and the time at the end, depending on which part you want to measure.
  - Fatih: don't have to worry about sensor time clock? Just the header time stamps from sensor topics come from sensor clock.
  - Fatih: this is more for looking at pipeline latency, over several nodes.
- Migrate to point_cloud_msg_wrapper: Migrate to point_cloud_msg_wrapper autoware.universe#1199
  - Max: we should have a separate package that is a dependency for Autoware/Nebula to avoid conflicting definitions
  - Testing: we really need unit and integration tests with real data
  - Should work top to bottom: start with sensing, move to perception etc.
  - Will check internally at TIER IV how much resource is required to implement and test
  - Bonus: since it will introduce a standard container, can use C++17 parallel algorithms
- GPU enabled tests: Tracking tests disabled due to lack of gpu capable machines autoware.universe#7724 (comment)
  - Koji: we can allocate some resource for this in Perception Team at TIER IV
  - Max: is paging an issue during builds?
    - Code build instances don't have any swap space available for them, but also using less cores so memory requirements are low
  - Also need to look at CMake and ament auto, where some modules are taking a huge amount of time
  - Could also improve ament instead of simply not using it
  - Fatih's build command for profiling and testing: `colcon build --symlink-install --event-handlers=console_cohesion+ --cmake-args -DCMAKE_BUILD_TYPE=RelWithDebInfo -GNinja --profiling-format=google-trace --profiling-output=cmake_profile.json`

        - Makes a huge build folder, so only use when analyzing

- Info share: some stuff on AV2.0
    - https://github.com/chaytonmin/Awesome-BEV-Perception-Multi-Cameras
    - https://github.com/WingkeungM/Awesome-BEV-Detection-Performance
- Info share: some development on adding yolov10
    - add yolov10 detection node autoware.universe#8753

Action items

- [ ]

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0 comments