

# Perception and Sensing WG Meeting

## 26/07/2023 #3695

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



drwnz on Jul 26, 2023

Collaborator

edited ▾

### Administrative

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


### Attendees

► Chaired by David

### Agenda

- Introduction of new attendees
- Progress report on **Cache-optimizing ring outlier filter** from Max
- Progress report on **PointPainting** from Shunsuke
- Review of [Project Board](#) and assignment

### Discussion topics

- Announcement from Mitsudome-san
  - Update from the Software Working Group: change in CI/CD due to memory requirements
  - When reviewing PRs, please refer to: [link](#)
- Introduction of new attendees
  - Welcome to Max - working as an intern at TIER IV for the next 6 months, for the meantime in Sensing team on optimization of Nebula
- Progress report on **Cache-optimizing ring outlier filter**
  - Addressing  [ring\\_outlier\\_filter blows up my cache \(and yours too\)](#) [autoware.universe#3269](#)
  - [Slides](#)
  - Mitsudome: Any target duration times?
    - Max: Vincent ran this on a cache limited CPU and saw it was causing 20% CPU usage, so there was no target performance

#### Category



Working group meetings


#### Labels

meeting:sensing-p...

1 participant



usage

- These results are on an X1 extreme laptop
  - David: would be interesting to test on ARM CPU
  - David: how about elevation filtering as well as azimuth?
    - Max: we can check vertically as well almost for free as the elevation points are next to each other in memory
  - David Walmorth: How wide a bar will be filtered? What about an angled thin bar?
    - Max: Yes will be filtered out
    - David: ring outlier filter is about speed, but has limitations as identified - 2D convolution would be better for comprehensive filtering
  - Fatih: How long does it take for the entire pointcloud to be processed?
    - Max: 5ms to 3.5ms for entire pointcloud
- Progress report on **PointPainting**
    - [Video link](#)
    - [Video link](#)
    - [Video link](#)
    - Fatih: how is it different from ROI cluster fusion?
      - Miura: Point Painting is ML based rather than deterministic
      - Semantic segmentation head to YOLOX may be released next month
    - PointPainting adds projected YoloX class label to each point
    - Merged into Autoware Universe  [Access PDF EBOOK EPUB KINDLE Michelin Romania Map 738 \(Maps/Country \(Michelin\)\) by Michelin !\[\]\(b71552d33dbf62adf5e5199a70ee02bf\_img.jpg\) #4314](#)
    - Model is also released (JapanTaxi)
  - Project board

## Action items

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0 comments