Realworld Dataset

This dataset was collected using the Mantis Unmanned Ground Vehicles (UGV) at an almond orchard in Mildura. Figure 1 shows our two UGVs and a small UAV exploring an apple orchard and Figure 2 shows the configuration of the sensors. These vehicles are part of on-going research at the ACFR in the area of UGV navigation, perception and control. The data has been presented in the same format as the simulation data you have been working with. You should be able to run this data through your system and test the effectiveness of your navigation and mapping algorithms on this real data.

Figure 1 - The Shrimp and Mantis UGVs exploring an apple orchard, accompanied by a small UAV

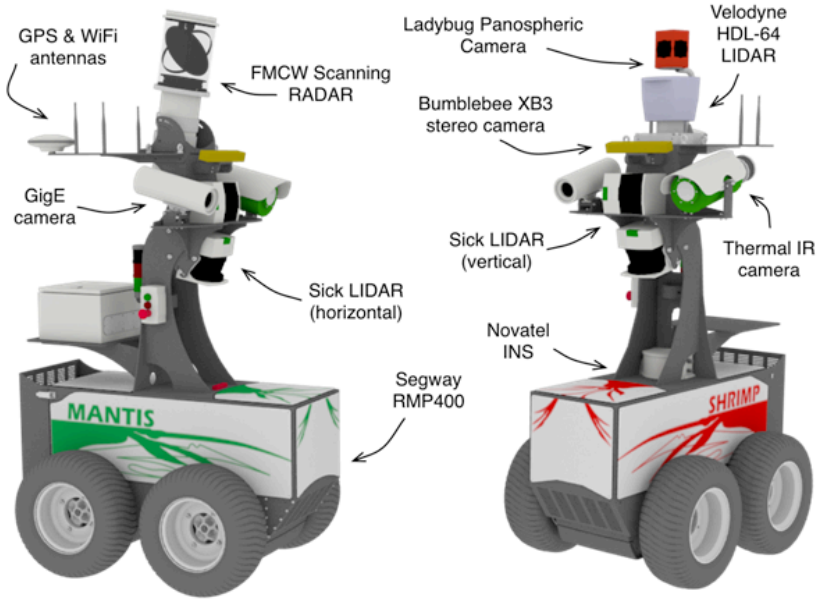

Figure 2 - The sensor configuration on the UGVs. For this exercise, we are using Mantis' SICK lasers and inertial system.

In addition to the horizontal laser similar to the one used in the simulation dataset, Mantis is equipped with a rotated, vertically mounted laser. This laser is swept through the environment, allowing for full 3D modelling of the environment. Figure 3 shows an example of different dataset collected by the Shrimp UGV. You can even see part of the Mantis UGV on the right hand side of the resulting point cloud. Let us know if you're interested in having a look at some of Shrimp's full 3D point cloud data collected by a Velodyne 3D scanning sensor.

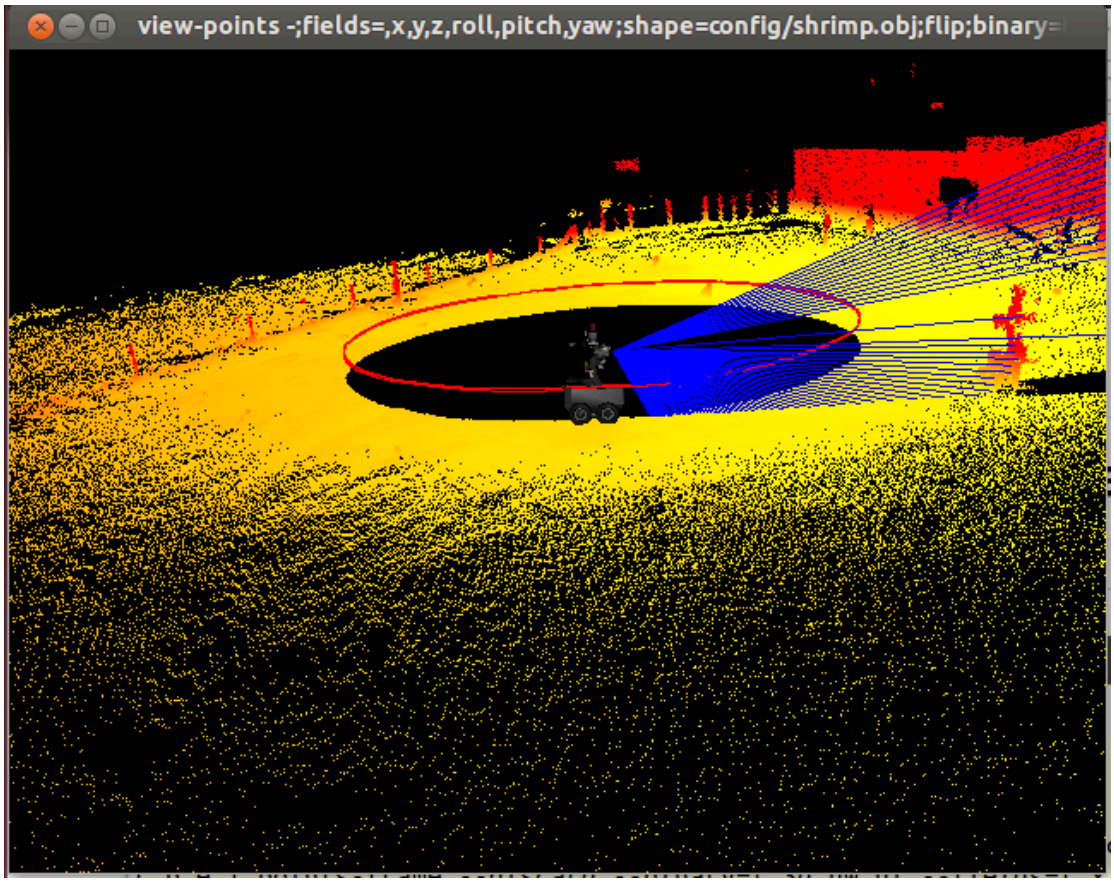

Figure 3 – Rendering of the 3D point cloud generated by fusing the vehicle's inertial navigation solution with its vertically mounted laser, shown for the current scan in blue.

References

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