

DIGIFRUIT Field Work

Sensor assembly and static testing in apple trees

On 11/04/2024, we have mounted several low cost fotonic sensos and tested them in an apple tree plantation located in the experimental fields of ETSEAFIV (University of Lleida). The tested sensors were: (1) Livox Mid-360 LiDAR sensor, (2) Livox Mid-70 LiDAR sensor, (3) Intel RealSense 455f, (4) Stereoloabs ZED X Mini Stereo Camera and (5) Microsoft Azure Kinect DK.



Starting of data acquisition in young apple trees (Gimenells, Lleida)



On 03/04/2024, we have begun data acquisition in a young apple tree plantation in the experimental farm of IRTA (collaborator of the DIGIFRUIT project) located in Gimenells (Lleida). This plot corresponds to a nutrition and irrigation dose trial in which we will be able to monitor the different vegetative growth and test the low-cost sensors that we are selecting and testing.

Static tests of photonic sensors in apple orchards





On 23/02/2024 we have carried out static tests in the apple orchard of the ETSEAFIV (Lleida) with the low-cost sensors of the DIGIFRUIT project. The aim is to determine the ability of these sensors to obtain 3D reconstructions of trees without leaves.

Testing of RGB-D cameras and low-cost LiDAR sensors

31/05/2024, we have On mounted RGB-D cameras and low-cost LiDAR sensors and tested them in an apple tree plantation located in the station experimental of Gimenells (IRTA). We have performed also а photogrammetric model of some of these trees



Measurements in an apple orchard with Azure Kinect



On 16/07/2024, we carried out measurements in the apple orchard at the Gimenells experimental station using two RGB-D cameras (Azure Kinect) positioned at different heights. This experiment was conducted in collaboration with researchers from the University of Brescia.





Adquisition of LiDAR data with three low-cost sensors

On 14/11/2024, We conducted tests along a row of apple trees (Gimenells experimental station, Gimenells) using three low-cost LiDAR sensors and a high-performance LiDAR backpack.



Launching of a experimental campaign of data acquisition



On 10/04/2024 we launched a new experimental campaign in the apple orchard at the Gimenells experimental station (IRTA). Unlike previous trials, the measurements with the LiDAR sensors were carried out throughout the entire orchard.

Apple trees in bloom





On 23/04/2025, we continued the LiDAR measurements in the apple orchard at the Gimenells experimental station (IRTA). The photos show that the trees were in full bloom.

