

Autonomy in the Orchard

One of our research ground vehicles, Mantis, was used to successfully demonstrate autonomy at an almond orchard.

The robot uses its forward looking laser to estimate the geometry of the tree foliage in front, enabling it to drive along the row without needing GPS. Additionally, it can detect people out in front, slowing down and coming to a safe halt.

The video shows a conceptual demonstration of how this could be used as a farmer assistance mechanism, whereby the vehicle could accompany a farmer, carrying heavy loads such as buckets of fruit, or towing other forms of equipment. Although demonstrated on one of our Perception Research Ground Vehicles (Mantis), the core technology can easily be applied to existing or new farm machinery.

GPS can be unreliable under canopied environments, due to occlusions between the vehicle and satellites. Therefore, forms of autonomy that require no GPS are likely to be more reliable.