



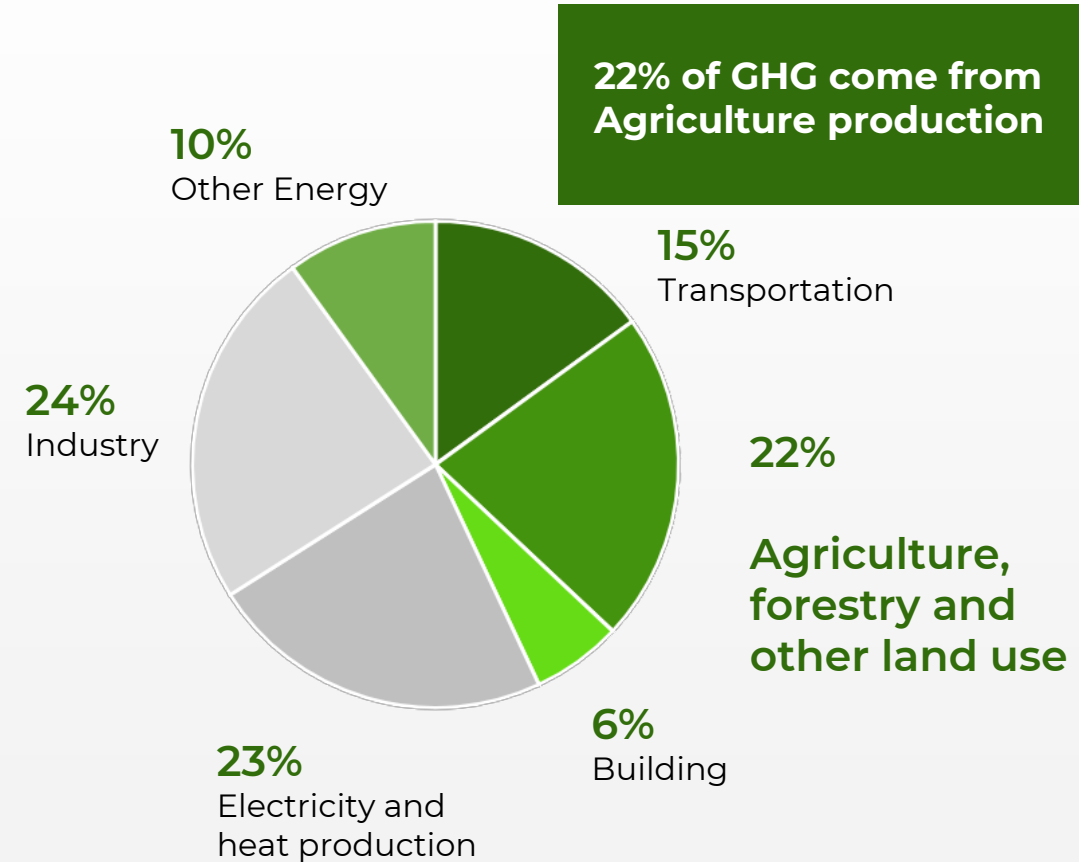
Big Ag is feeding the world, but it is killing the planet and its people



Herbicides are increasingly linked to diseases such as parkinson



Current methods are killing topsoil and yields are plummeting



But..





What does someone cost per hour laying on their belly picking out weeds 1 by 1?

How many hours manual hours per HA for an organic farmer?

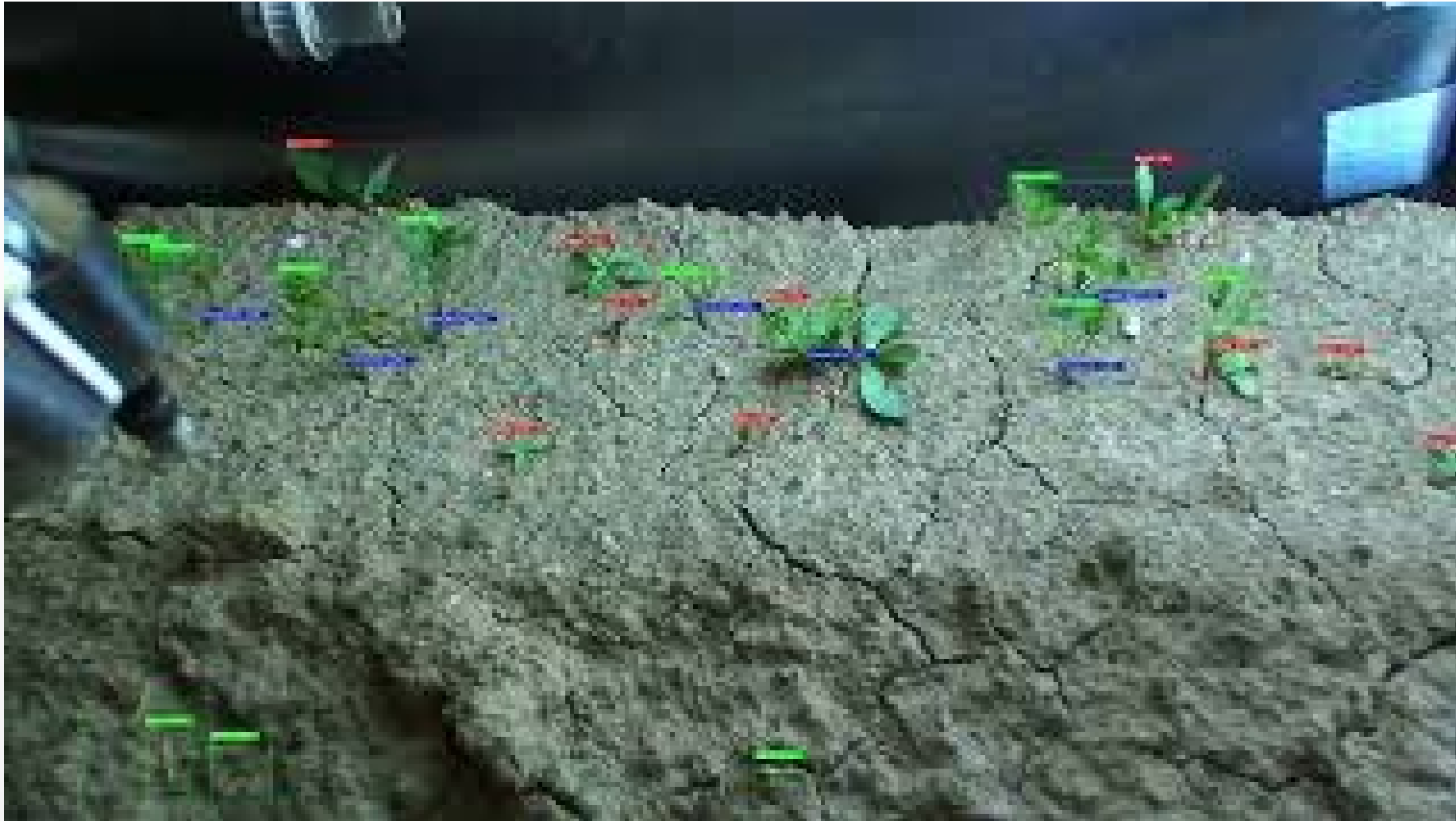
How much margin does an organic farmer make in general?

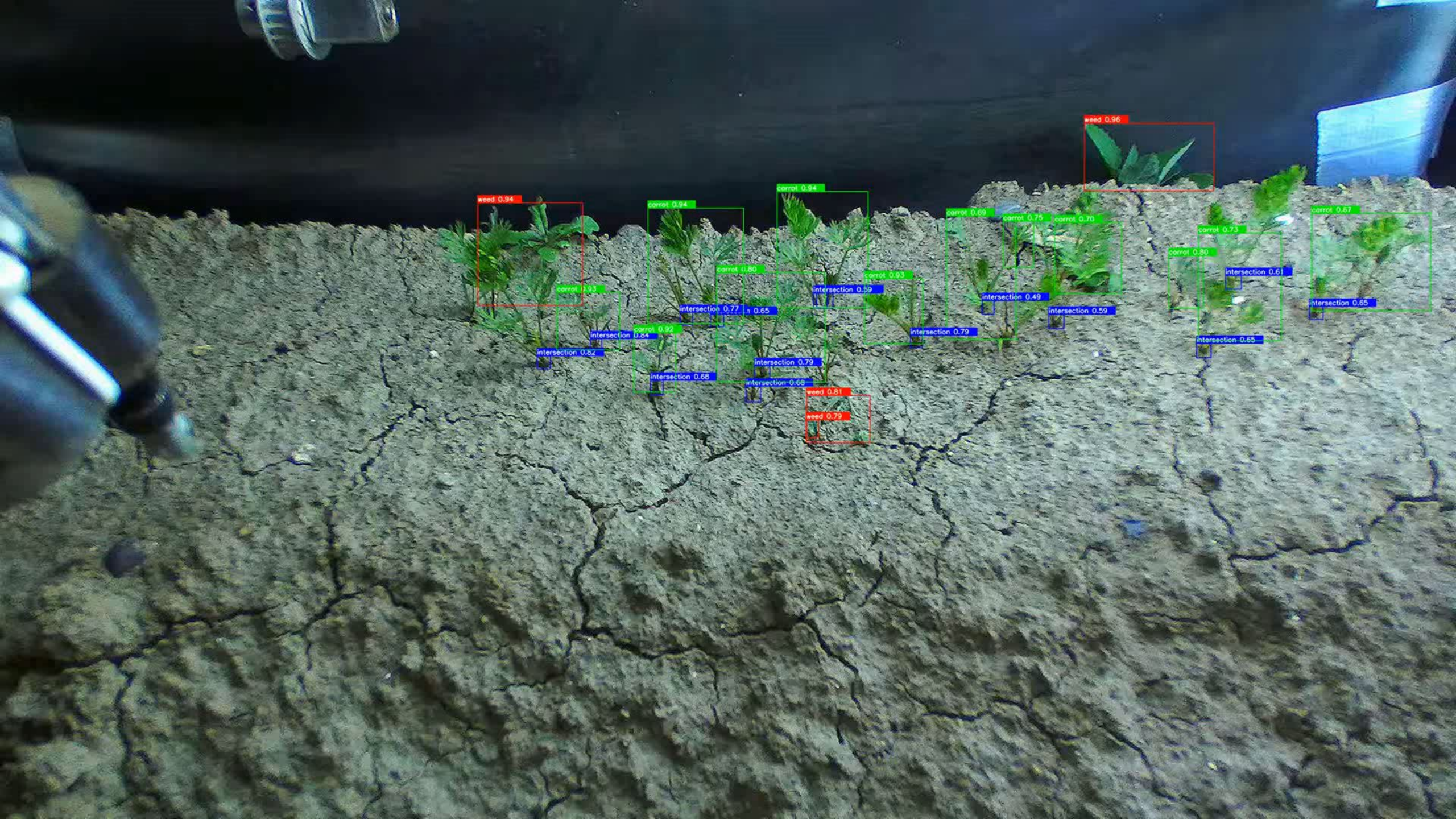


Trabotyx uses computer vision and mechtatronics to identify and take out individual weeds



Vision: Detect, classify, position and attack in <100 milliseconds





weed 0.94
carrot 0.93

carrot 0.94
carrot 0.80
intersection 0.77
intersection 0.54
intersection 0.82
intersection 0.92
intersection 0.68
intersection 0.79

carrot 0.94
intersection 0.65
intersection 0.59
intersection 0.79
weed 0.81
weed 0.79

carrot 0.93
intersection 0.59
intersection 0.79

carrot 0.69
carrot 0.75
carrot 0.70
intersection 0.49
intersection 0.59

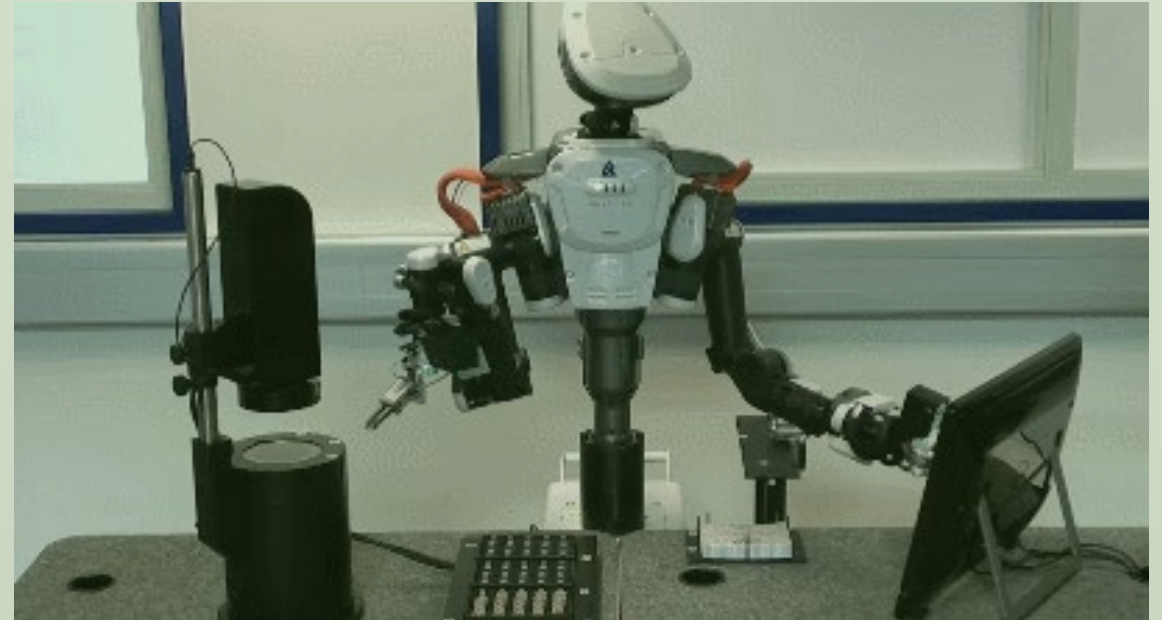
weed 0.96

carrot 0.73
carrot 0.80
intersection 0.61
intersection 0.65

carrot 0.67
intersection 0.65

What do robots like

Clean, Repetitive & Standardized



Welcome to a day in the field





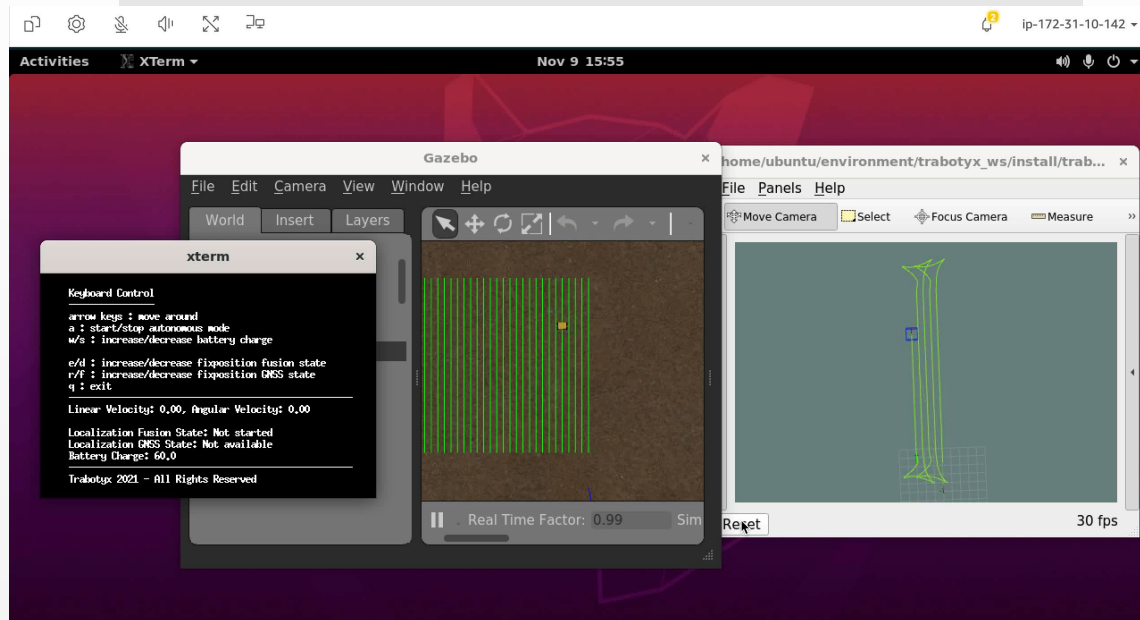
Welcome to a day in the field





Agricultural robotics is hard, because off endless edge cases

Simulation :)



Reality :(



Agricultural robotics is hard, because off endless edge cases

Where to hit?



Which weed to choose



Adding weeding in South of Europe allows for 210 days of utilization per year



Weeding from October till February



Use-case is similar, except ridges are less common



500-600 euro pay-per-HA



January February March April May June July August September October November December



60 days



60 days

90 days

How to make the transition to field automation successful

1. Farmers should be able to try robotica with only operational risk, not financial
2. End-user subsidies should be focused on using and not on buying
3. Suppliers should really really really undersell, because farming is about mastering edge cases and that is very difficult

