Sen4Weeds

Early In-Field Weed Detection

DigiFarm in collaboration with Altyn, funded by Ai4Copernicus is developing a deep neural network model for detecting in-field weeds. In our primary commercial beat launch this will be targeted for sugar-cane in Brazil with further expansion to Canada and Northern Europe for wild-oats.

- Stage: focusing on detection of weeds pre-closed-canopy (period where both crop, weeds and soil are expected to be visible).
- Size: the minimum target weed patch is 3×3 meters.
- Ground truth: worked with local partners in Brazil to collect approx. 10 million hectares of training data which is used to train the model.

Early results include:

- 130 fields
- Total area: 1450.0 ha in 980 sec
- Average processing time 1.5 ha per sec
- R2 = 0.89

Results & Legends: Legend

High-res drone labels

10×10m tiles with >20% weed pressure based on high-res drone labels

10×10m Sentinel-2 pixels classified as weeds

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