

DIGIFARM

DETECTING THE WORLD'S HIGHEST ACCURACY FIELD BOUNDARIES TO POWER PRECISION AGRICULTURE

ABOUT

DigiFarm is a Norwegian based ag-tech startup established in 2019.

DigiFarm's core vision is to detect the world's most accurate field boundaries and seeded acres to power precision agriculture. This is achieved through developing deep neural network models for automatically detecting field boundaries through super-resolving Sentinel-2 satellite imagery (to 1 metre resolution). DigiFarm has successfully validated the model on 450 million hectares of fields achieving detection accuracies of above 96%, 12-15% higher than existing boundary data (Cadastral, LPIS in EU and CLUs in US).

DigiFarm has over 50 clients in over 17 countries with 1.5M+ EUR in ARR and a team to 58 in just over a year.

CHALLENGE

The aim of the pilot included developing and training a deep neural network model for detection of entire-country sized regions including Germany, Austria, Belgium, and the United Kingdom.

HOW THEY USED EOSC SERVICES

DigiFarm utilised the EGI-ACE enabled GPU and HPC resources to train and develop a highly accurate AI-model (image segmentation). Furthermore, DigiFarm also leveraged technical consultancy, visibility, and funding opportunities services provided by the EOSC DIH.

RESULTS

The deep neural network model developed with the support of the EOSC DIH can automatically and accurately detect agricultural field boundaries based on the deep-resolution Sentinel-2 at 1m per pixel resolution Satellite Earth Observation data.

DigiFarm managed successfully to delineate field boundaries and seeded acres across the AOs including Germany, Austria, Belgium, and the United Kingdom. DigiFarm also managed to achieve the targeted accuracy (IoU) of 0.94+ across all the regions. This resulted in achieving 10-12% higher accuracy than LPIS (Land Parcel Identification System) Cadastral data which was benchmarked against field boundary delineation assessed across 200k hectares in England, Belgium, and Austria.

IMPACT

With the new data and the model, DigiFarm has managed to attract new potential clients and has also applied successfully for next round of funding.

DigiFarm also generated a lot of know-how around model training, GPU-setup and on how to build and develop a scalable, automatic, and cost-efficient data processing pipeline.

The TRL increased from TRL5 to TRL6.

COUNTRY: NORWAY

SECTOR: AGRITECH

TRL **6**

1 2 3 4 5 **6** 7 8 9



BUSINESS PARTNER



DigiFarm

EOSC SERVICE PROVIDER



SUPPORTING PROJECT

