SPECTRO-AG

AUTONOMOUS AI SOLUTIONS FOR #EFFICIENTINSPECTION

CorporateLiveWire
INNOVATION
& EXCELLENCE AWARDS
2023 WINNER

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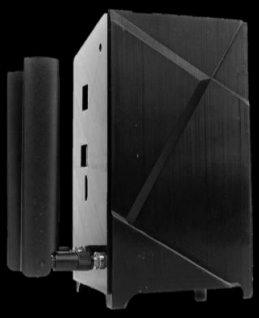
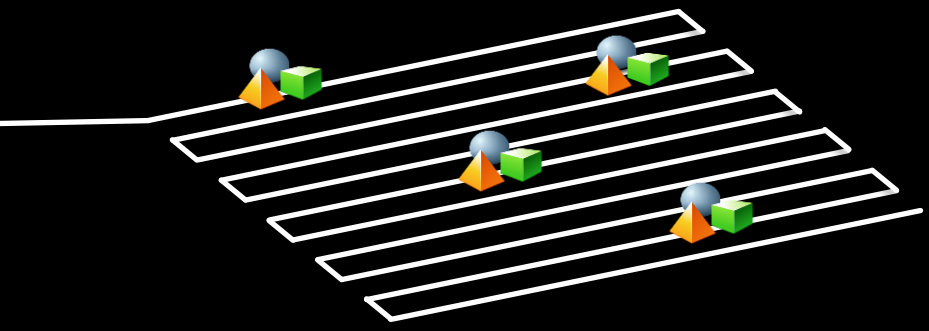
Deep4Drone





RTK GPS Accuracy

Object 1: (X, Y, Z)
Object 2: (X, Y, Z)
Object 3: (X, Y, Z)
Object 4: (X, Y, Z)

Real time AI solution to detect, map and count your object of interest from sky!

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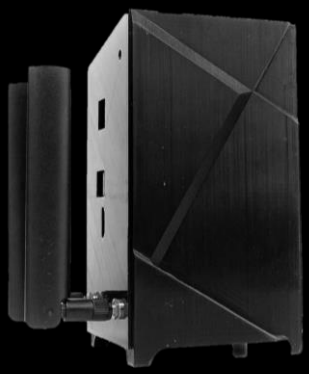
Deep4Drone

Supported Drones

- Mavic 3T enterprise
- Mavic 3E enterprise
- Matrice 300

Software

- The Deep4Dron app for controllers
- Pre-parked AI models
- Adding new models
- Detection of objects
- Location of object
- Count of Objects
- Count number of objects
- RGB and Thermal cameras
- 2 years free update



Hardware

- Brain-box unit
- Compact 15 x 10 x 10 cm
- Battery is included
- Direct power for unlimited use
- Wireless communication
- Sim card module

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Hircus Robot

ONE ROBOT – MULTIPLE APPLICATION

CAPRAROBOTICS®

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TECHNICAL SPECIFICATIONS

Dimensions and Weight	
External Dimensions (LxWxH)	1106x600x373 mm
Wheel Diameter	326 mm
Clearance Height	126 mm
Weight with 2 batteries	50 kg (with 2 batteries)
Speed and Performance	
Maximal Speed	6 km/h
Maximal Incline	30%
Curb climbing	140 mm
Turning Radius	465 mm
Chassis	4-wheel robot frame
Motor Type	4 pcs. hub motors of 250W
Payload Capacity (sum max 100 kg)	50 kg
Effect	
Battery Type	Li-NMC
Capacity	Up to 6 units of 25.9V, 20 Ah
Operating Time	17,5 Hours (with 6 batteries)
Range	105 km (with 6 batteries)
Charging Time	3 Hours
Environment	
Operational Temperature Range	-20°C to +50 °C
IP Rating	IP 65
Usage	Primarily Outdoors
Interface and Communication	
External Communication	Redundant 4G router with Dual-band WiFi
I/O	RJ45 Ethernet (with access to ROS2)
Manual Steering	Remote Control and pull rod
Safety	
Collision Avoidance	Ultrasound Sensors Bumper bar
Safety	Machine directive EMC test: EN55032-2015, Class B, EN61000-4-3:2006 +A1+A2, EN61000-4-2 2009 Design for safety According to ISO 13849-1 (PLc): Emergency stop, Emergency brake and braketest, Manuel brake test, Relay and contactor test.

SECURITY

MAINTENANCE

LOGISTICS

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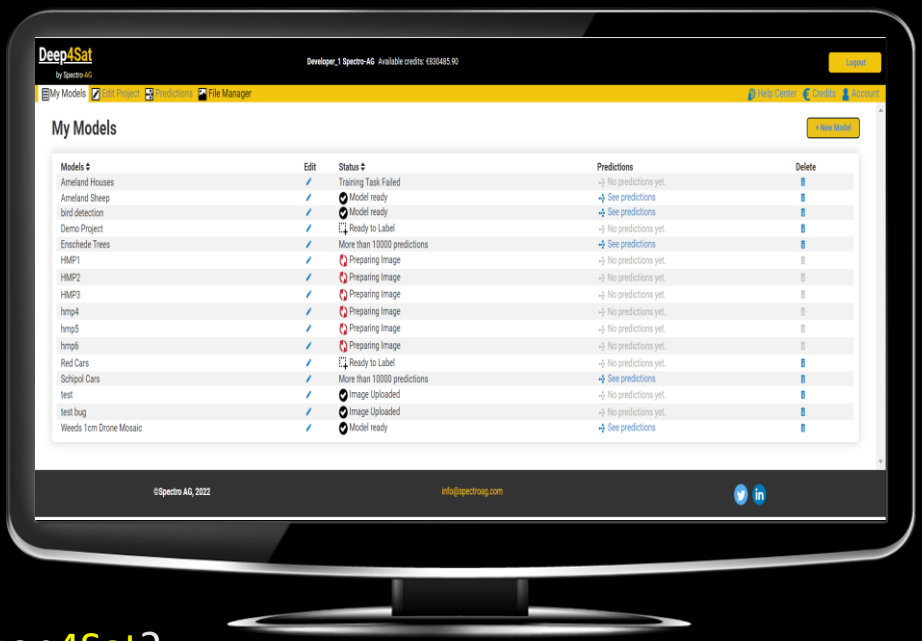
Deep4Sat

Automatically detect, count and map your object of interest from Space and sky!



What is Deep4Sat?

A Geo-AI solution to build and operationalize deep learning models for detecting, counting and mapping objects of interest in high-resolution satellite and drone mosaics images.

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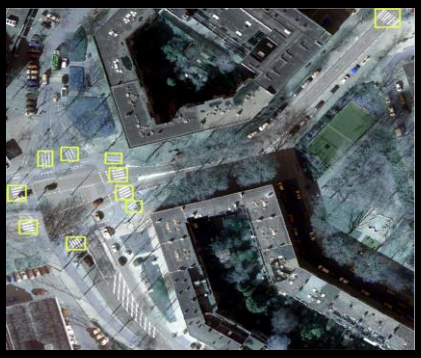
Deep4Sat



Features

- ✓ **Upload of satellite, aerial and drone images in GeoTIFF**
- ✓ **Visualize, label and train models in different bands combination**
- ✓ **Build Deep-Learning models in user-friendly interface, no coding!**
- ✓ **Download the detected and counted object as a GIS layer (.shp)**
- ✓ **Re-use your models to detect and count on new images**

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HyperSlit®

The answer towards time consuming and expensive spectral signature data acquisition

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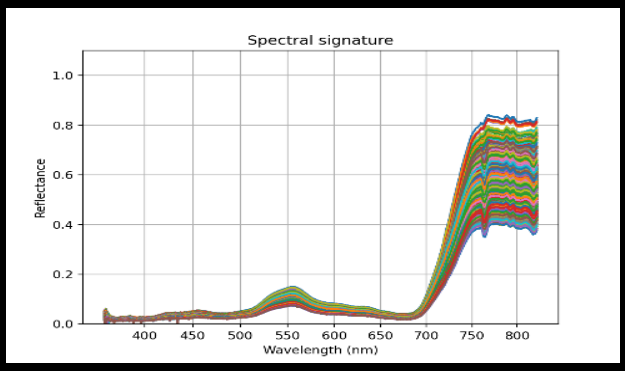
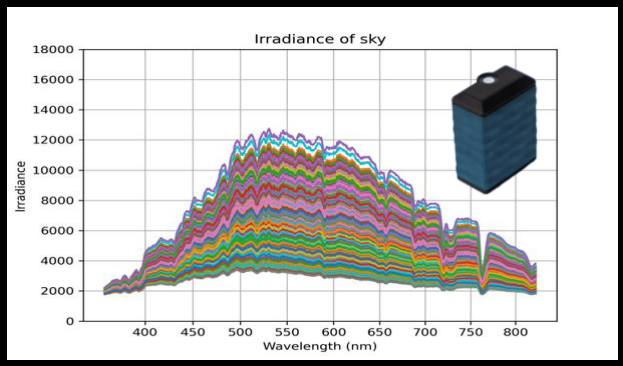
Features

- Target focused spectrometer
- Irradiance spectrometer (180° FoV)
- 0.5 nm spectral resolution
- UV model (210-600 nm)
- VISN model (350-800nm)
- NIR model (650-11nm)
- High signal-to-noise (>1500:1)
- Dynamic range (4600:1)
- RTK GNSS module integrated
- IMU module integrated
- RGB camera (Co-axial)
- Ultralight (<500 gr)
- Wireless connection and settings
- HTML user interface and data logger
- Post processing software
- Co-registered signatures with RGB
- Georeferenced spectral signature
- Interpolated .Geotiff maps
- Powered by drone or cable
- Data efficient (128GB memory)
- Training course included
- Two years warranty





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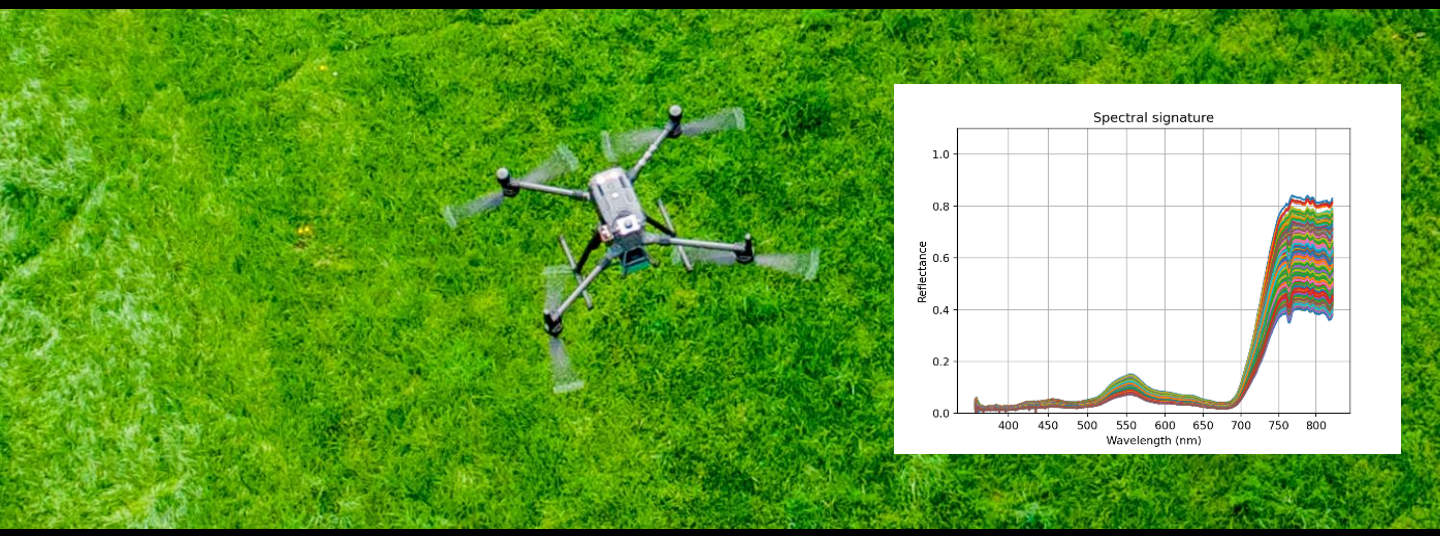
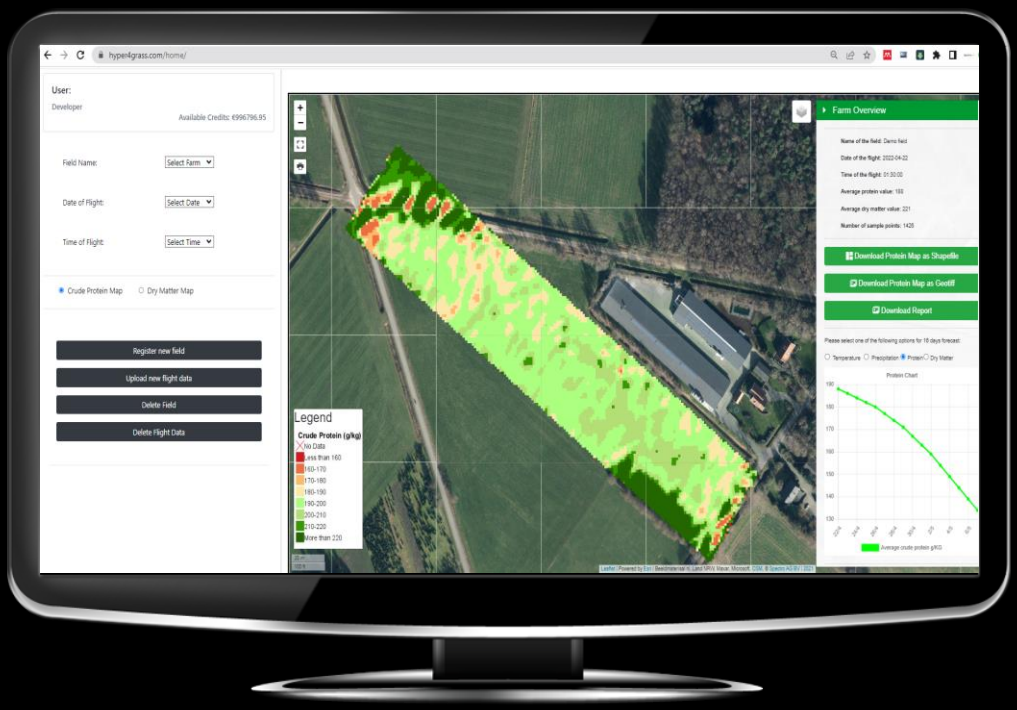
Hyper4Grass



Hyper4Grass is a solution (software & hardware) for monitoring, mapping and predicting grass quality in grasslands using hyperspectral drone



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Hyper4Grass

Software

- Secure Web application and database
- AI algorithm
- Crude protein quality (g/kg) map
- Dry matter quality (g/kg) map
- Map formats .SHP and .GEOTIFF
- Prediction of quality over 2 weeks
- Weather data integrated
- Database of parcel history
- No monthly subscription
- Credit based payment
- No data processing, no cost for user

www.hyper4grass.com

Hardware

- Drone-based hyperspectral sensor
- 350-820 nm light spectrum
- 0.5 nm spectral accuracy
- RTK GPS integrated
- Plot-based measurements
- Data efficient (Total memory 64GB)
- DJI M300 drone (50 mins flight time)
- DJI M200 drone (30 mins flight time)

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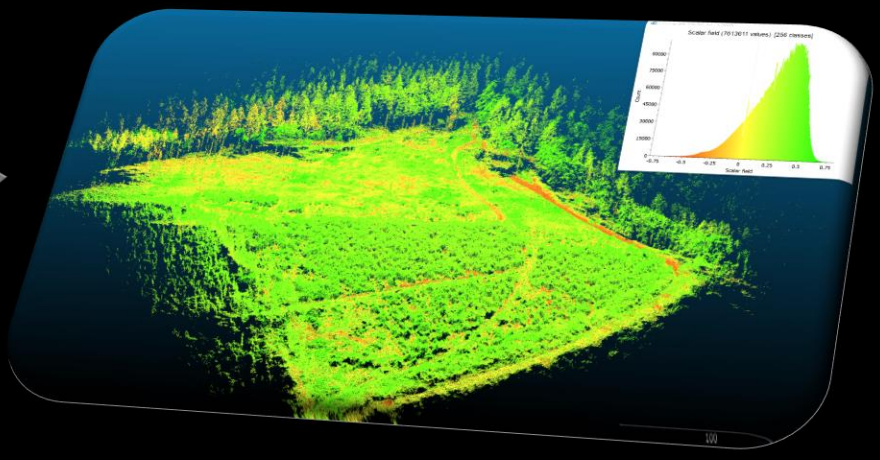
3D-NDVI



High resolution 3D NDVI point cloud using from drone-based multispectral images!

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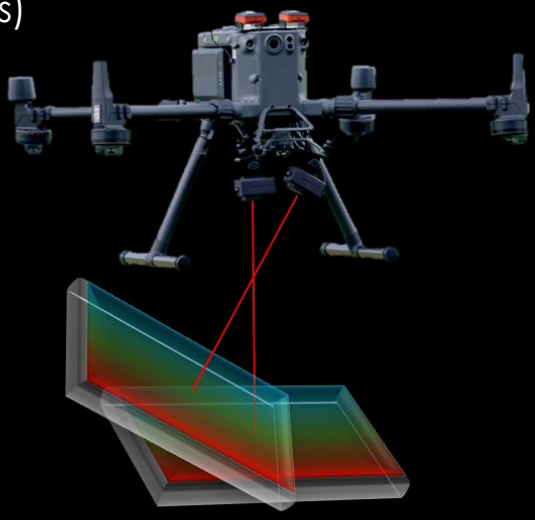
3D-NDVI

Supported Drones
- Mavic 2 & 3
- Matrice 300

Supported camera
- PARROT SEQUOIA +

Software
- The 3D-NDVI mapper (desktop for Windows)



3D-NDVI camera interface
- Drone-powered interface

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