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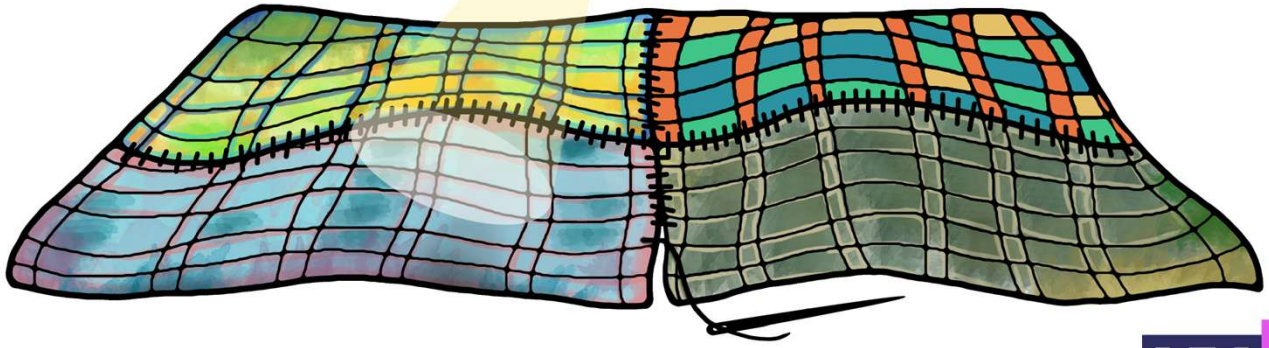
DEDAL: Distributed Ecosystem for Drone Analytics in Life-sciences.

Turning Little **Resources** Into **Impact** , One "**Spare**" Moment at a **Time**.



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Unlocking Nature's Diversity

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The Challenges:

High-capability drones are now more **affordable**, making them valuable tools for assessing plant health.

However, users still need to **extract** scientific insights from the **images**.

There challenges are:

- High **cost** of proprietary **software licenses**
- **Hardware** requirements for data processing
- Complexity of **integrating** open-source solutions and **security** best practices

Key question:

Can we **help** the **community** by making it easier to translate drone **pictures** into actual **data**?

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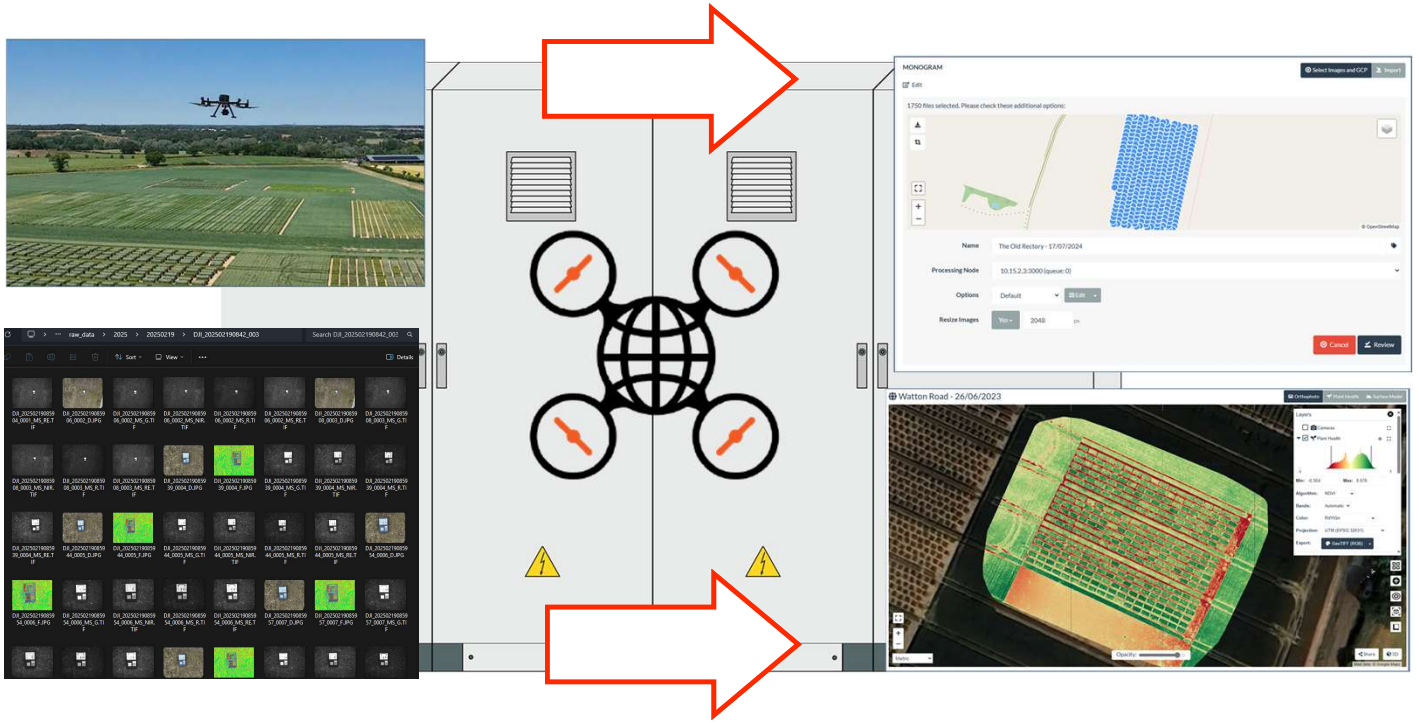
The Implementation:



This was **implemented** in my **"spare time"**, alongside my duties as **Research Software Engineer.**

Current Status:

DEDAL also provides **FIELDimageR** environments for users to process the **orthometric** images and extract insights.

The system can **support** at least **20 parallel users**, with jobs queued efficiently.

This work was presented at this year's **MONOGRAM** conference, **winning Best Poster in the Phenomics & AI category**.

This is a proof of concept.

- We have not advertised the platform widely yet.
- Inspire Farmers and researchers to use drones.

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Future Development:

Simplify data processing by adding **a web interface** that automates the extraction of the data from orthometric images.

Extend functionality through **QGIS** integration.

Explore opportunities for **training and applying AI models** in image analysis.

Adding to OpenDroneMap **Image calibration support, contributing it back to the community.**

Improve advertising and apply for grants to host the system on more powerful infrastructure with **dedicated storage**.

These opportunities are ideal for a **Master's project** or **Year-in-Industry placement**, providing value to both students and the project.

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Thanks for listening! Do you have any questions?

TRY IT NOW

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FIELDimageR Extra

ODM

Research Computing

Acknowledgments:
NBI Research Computing and Core Computing Teams, Sarah Brookes, Alba Pacheco Moreno.
OpenDroneMap Authors ODM – OpenDroneMap/ODM GitHub Page 2020; https://github.com/OpenDroneMap/ODM
Pawar P & Matias FI.* FIELDimageR.Extra. The Plant Phenome J. 2023; https://doi.org/10.1002/ppj2.20083

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