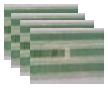
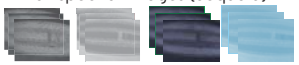
DRONE DATAFLOW

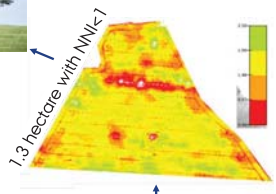
WILL BE PRESENTED AT ECPA 2019



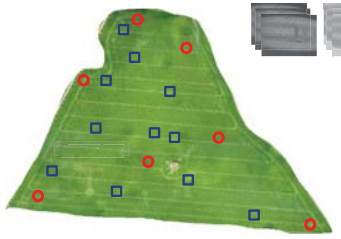
RGB images

Multispectral images (Sequoia)





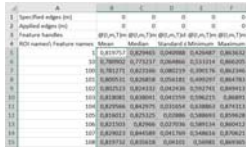
1.3 hectare with NNI<1



Emotion → Detect GCPs → Stitch images → Extract ROIs

GCPs

ROIs



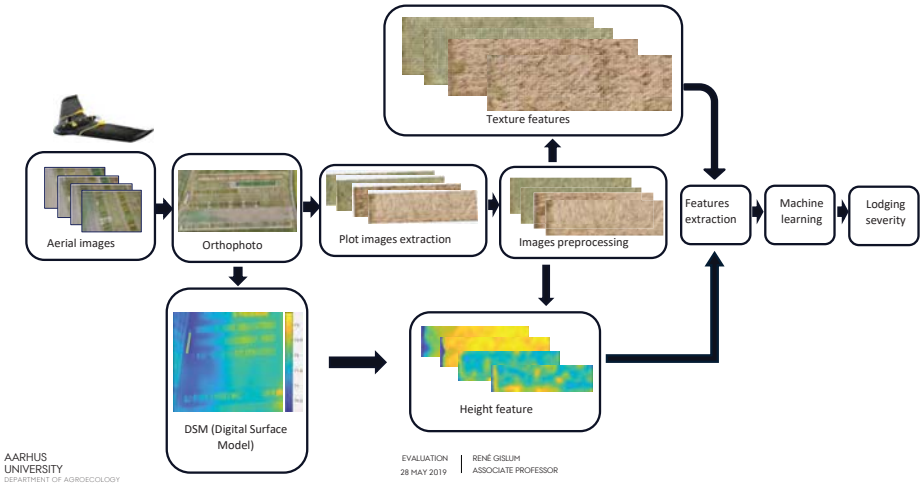
ROI	Mean value
1	0.87
2	0.86
3	0.81
4	0.79
5	0.82
6	0.89
7	0.79
8	0.80
9	0.84
10	0.83

DIGITAL AGRICULTURE

René Gislum

- Sensor technologies
- Robotics
- AI and big data analysis
- Data storage and management
- Data governance

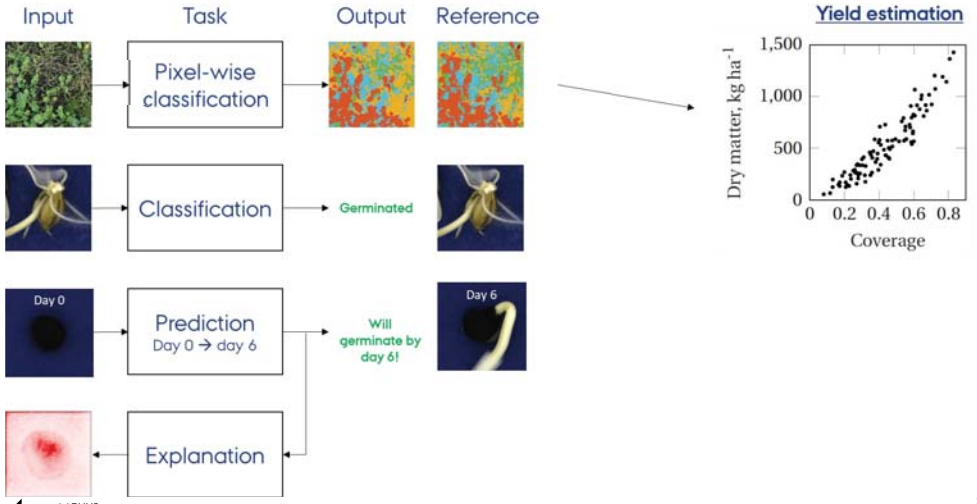
THE USE OF IMAGES TO ACCESS LODGING



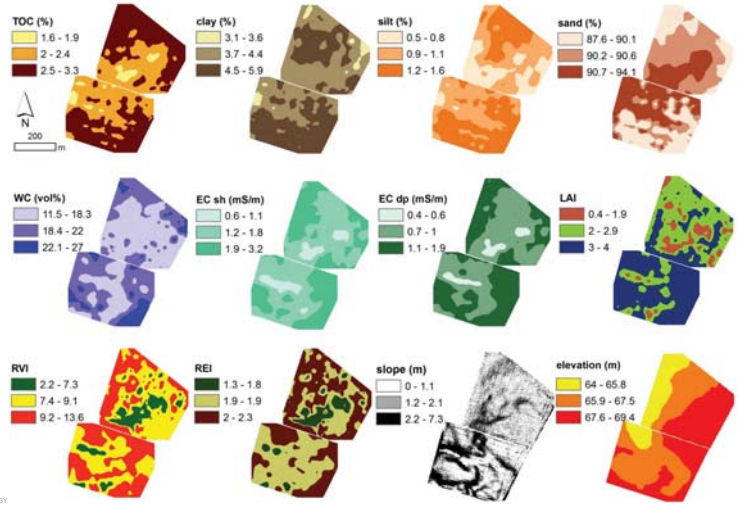
GROUND TRUTH DATA AND INTERPRETATION OF RESULTS TO MANAGEMENT USE

An important role for Agroecology is to collect 'ground truth data' from our many field experiments – we have state-of-the-art sensor technologies, GPS hardware and data storage facilities

DEEP CONVOLUTION NEURAL NETWORKS



SENSOR FUSION AND DATA MINING



FUTURE PERSPECTIVES

Close collaboration with the Department of Engineering e.g. Future Cropping

Newly started projects on:

- Detection of diseases in cereals, onions and potatoes using robots
- Prediction of nitrogen uptake in field crops based on satellites
- Use of satellite images for soil characteristics
- Use of sensor input in crop growth models
- Precise soil cultivation and seeding

The possibility to include calculation of climate and environmental effects from 'Digital Agriculture'

We already have a close collaboration with the Department of Engineering and know their qualifications within data storage and management.

TILLAGE AND SOWING

- Development of design-tool for tillage implements
- Development of sensor technology for seedbed quality evaluation
- Planning and scheduling tool to optimize tillage and traffic operations
- Improved basic knowledge on soil workability
- Develop sensor technology and control systems for spatio-temporal optimized tillage and crop establishment
- Impact of seedbed quality on pesticide leaching potential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