MERIAVINO

Multiscale Sensing for Disease Monitoring in Vineyard Production

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Summary

- Sensing and monitoring vineyards in three European countries
- Agronomic protocols for data acquisition
- Data and AI for diseases detection and prediction
- Data protection

Research questions and hypothesis

1

Intelligent acquisition methods and data processing can improve production efficiency and operating costs

2

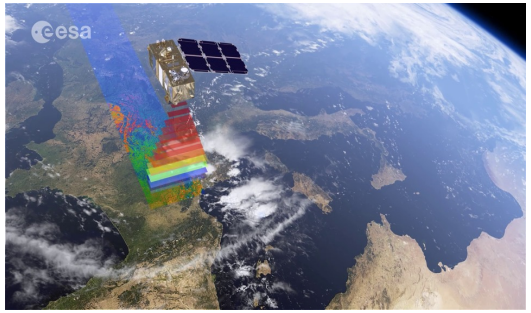
Machine Learning models can enable earlier detection of the vine diseases, and the estimation of yield quality and quantity

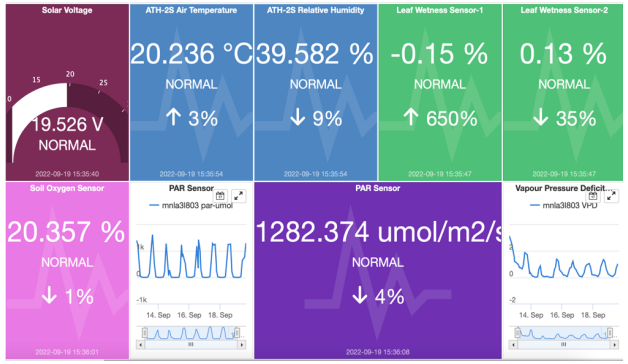
3

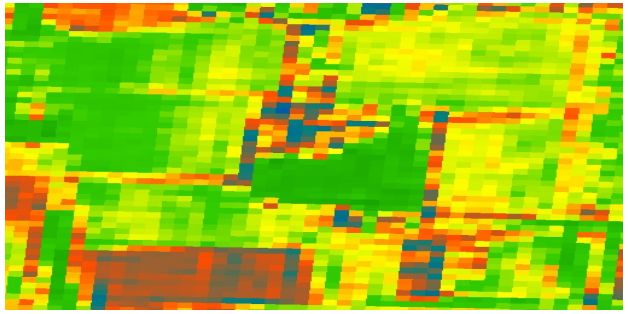
Earlier disease detection and localization will enable better management of vine crop and reduce phytosanitary chemicals

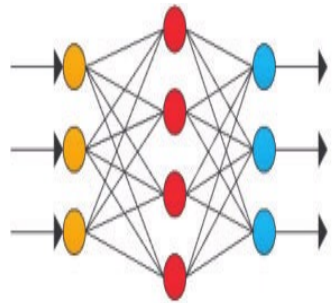
Heterogenous data from vineyards in different countries will enable to develop robust decision tools based on AI

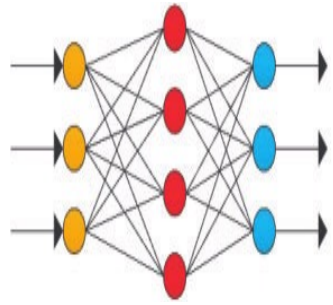
Methodology and preliminary results

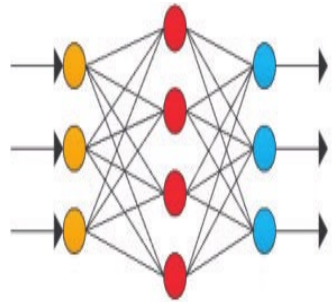


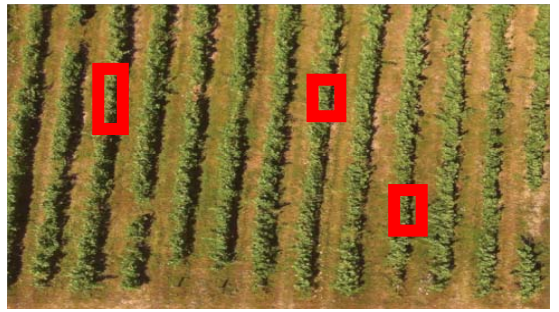


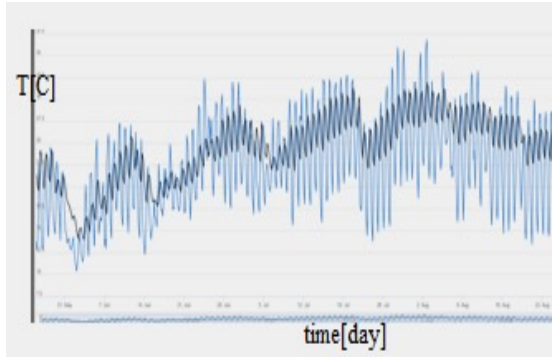












Preliminary conclusions

- Some vine disease, such as downy mildew, can be automatically identified using IoT and imaging system with machine learning algorithms.

- A new smart technology based on IoT and imaging systems with AI approach, can contribute significantly to precision viticulture

Preliminary conclusions

- Development of sensors and IoT system, including data security and protection.

- Development of new methods for data fusion and correlation between different sites for earlier disease identification and prediction, evaluation and demonstration.