

The Augmented Agronomist Pipeline and Time Series Forecasting

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Summary

In this poster we present our work in progress. We seek to augment agronomists ability to accurately predict yield based on temporal and spacial factors. This includes automated data collection, problem identification and signaling to agronomists for diagnosis and labelling of difficult cases. This will also use certainty metrics for identification of difficult cases, such that an active learning approach can be taken. We also create pipelines for distributed data collection, aggregation, training, and inference. We currently focus on strawberry tabletop scenarios, using our own strawberry crop on our Riseholme campus.



Robotic platform

Our experimental data collection platform conducting data collection.



Preliminary Results

At this early stage we have applied recurrent neural networks (RNNs), long short term memory (LSTMs), and Gated recurrent units (GRUs) for environmental-yield prediction.

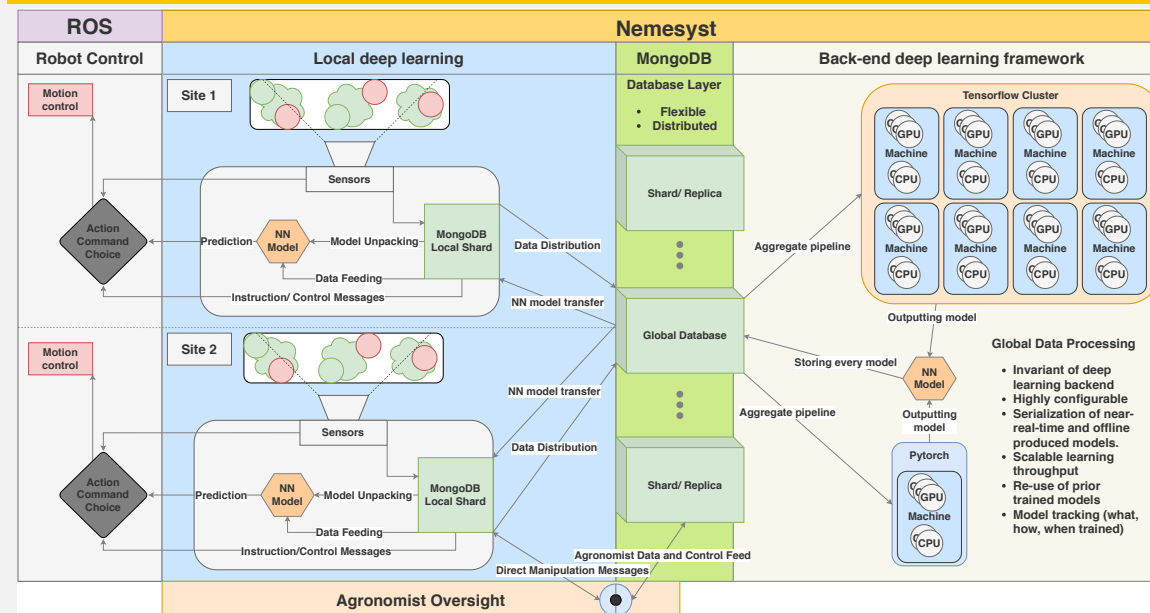
Technique	MAE (Test)
RNN	0.210
LSTM	0.381
GRU	0.155

Flowering



Currently best estimates for strawberry yield are rough counts of strawberry flowers, given a certain percentage lost, combined with expected growth hours, which are hours spent above a certain temperature threshold.

Architecture



Contact Information

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