

Application of machine learning algorithm in understanding growth pattern of miscanthus

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Problem

- As miscanthus gains popularity as a bioenergy crop in the United States, many public and private companies are conducting research on the long-term impacts of various fertilization schemes on yield. Some studies show a significant response to nitrogen application, while others have achieved high yields with no additional nutrients

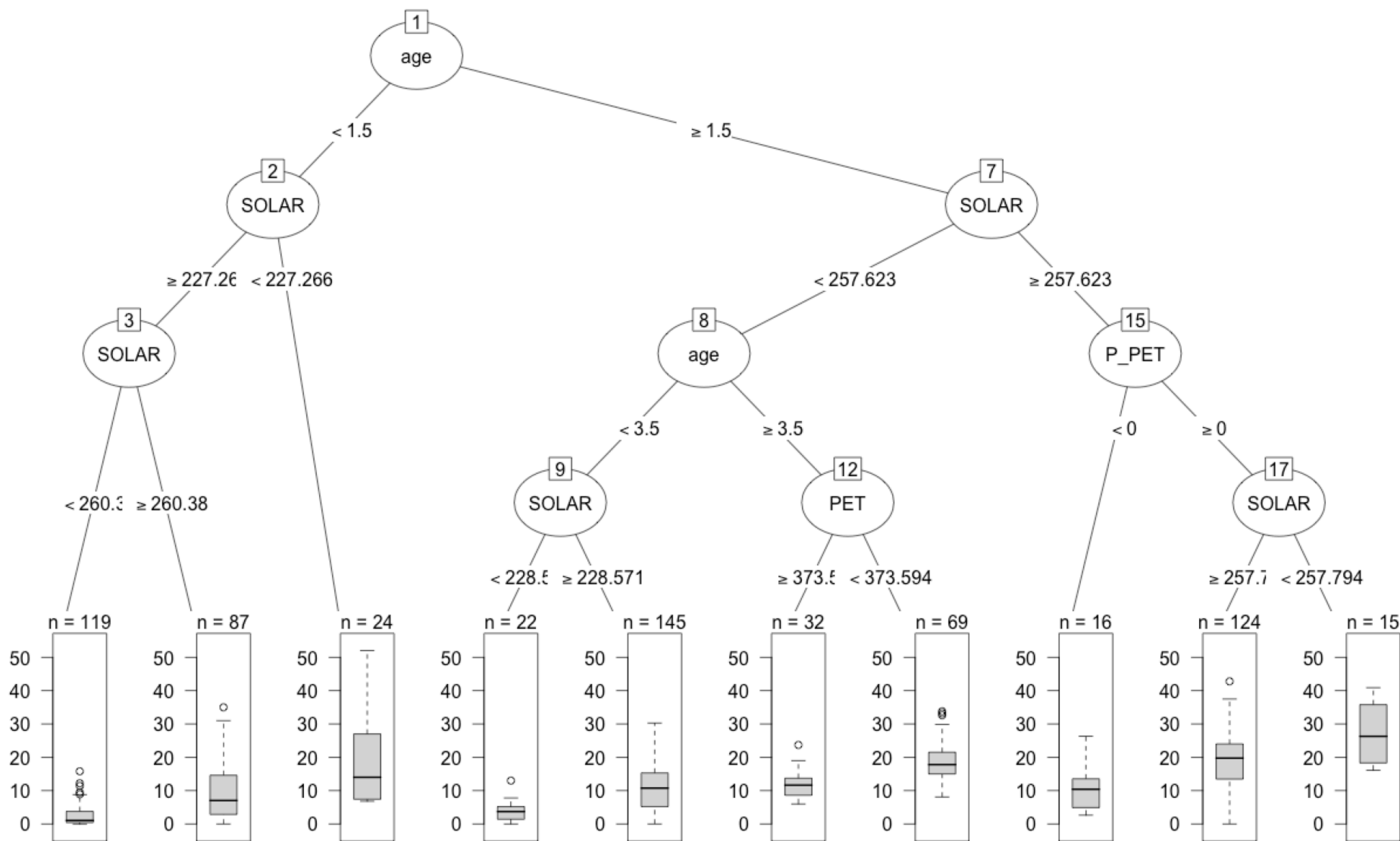
Dataset

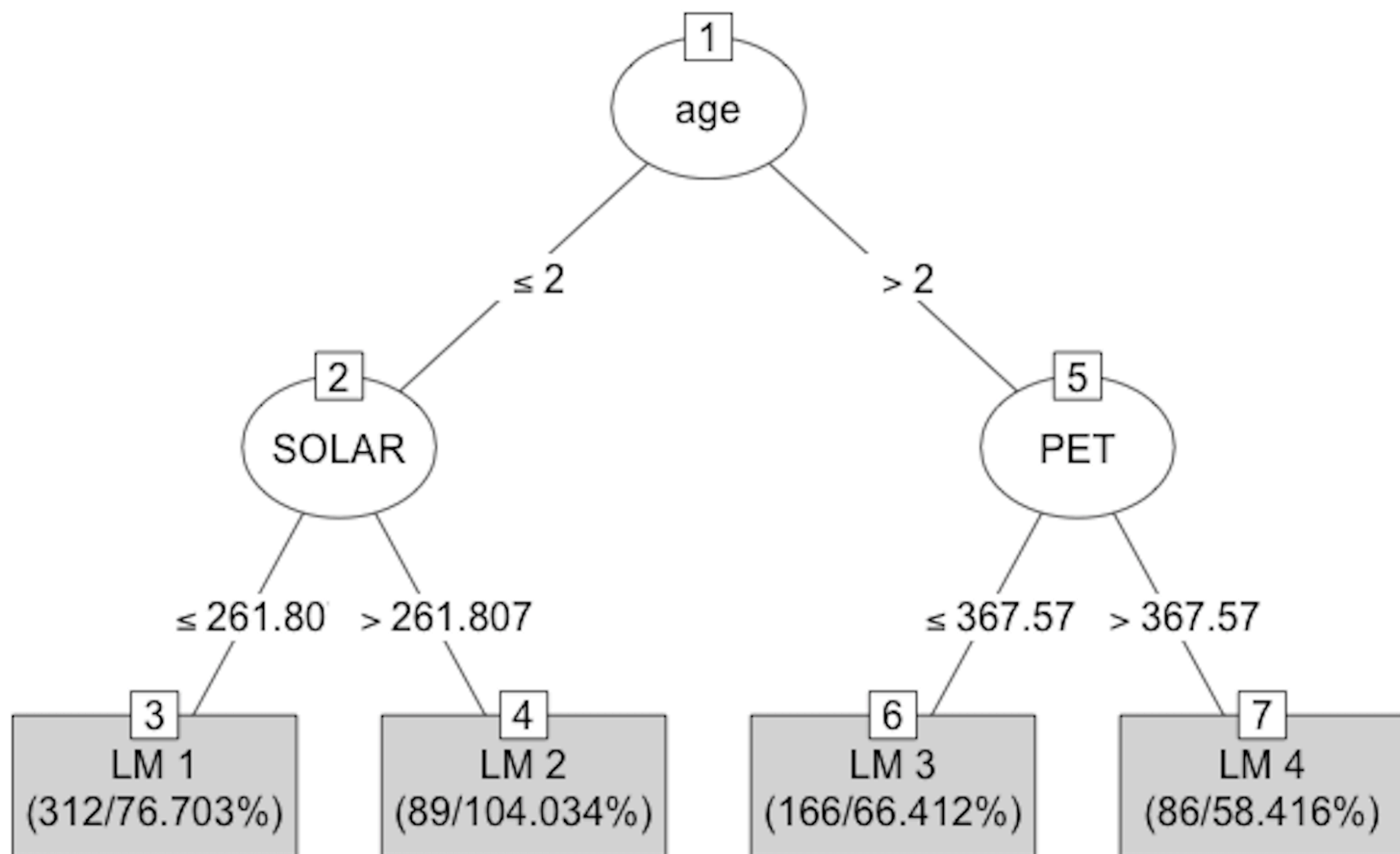
- "irrigated"
- "sacchariflorus" "sinensis" "sinensis.Hybrid" "giganteus"
- "fertilizer_n"
- "planting_density"
- "age" "MAT" "MAP" "PET" "SOLAR" "P_PET"
- **"yield"**

From BETYDB

Regression

- Regression Tree
- Idea of entropy
- M5P tree:
- M5P learns a "model" tree - this is a decision tree with linear regression functions at the leaves.





Classification

- Discretize the “YIELDS” by quantile (5)
- NaiveBayes: (~50%)
- kNN (~85%)

Thank you