Exploring the Impact of Decision Tree Depth

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ABSTRACT

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CCS CONCEPTS

• **Computing methodologies** → **Machine learning**; *Supervised learning by classification*; *Classification and regression trees*; Cross-validation.

KEYWORDS

decision trees, model selection

1 BACKGROUND AND MOTIVATION

Construction of decision trees commonly occurs in two phases: first, a "growing" phase, in which data is used to expand the decision tree, followed by a "pruning" phase, in which noisy or otherwise meaningless nodes are removed from the tree and replaced with leaves. This second phase is used to combat overfitting, and determines how complex the decision tree is.

Russell and Norvig [1] showcase an implementation of restricting a decision tree to be beneath a maximum size by generating the tree in breadth-first fashion, and stopping when the maximum number of nodes has been reached. This implementation does not require a separate pruning phase, and attempts to balance the tree as best as possible by constructing it in breadth-first fashion.

2 METHODS

3 RESULTS

4 DISCUSSION

ACKNOWLEDGMENTS

REFERENCES

[1] Stuart J. Russell and Peter Norvig. 2010. *Artificial intelligence: a modern approach* (3rd ed.). Prentice Hall.

A RESEARCH METHODS

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B ONLINE RESOURCES

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