Package 'ImNN'

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Type Package

Title Neural Networks for Predicting Volume of Forest Trees

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Description Neural network has potential in forestry modelling. This package is designed to create and assess Artificial Intelligence based Neural Networks with varying architectures for prediction of volume of forest trees using two input features: height and diameter at breast height, as they are the key factors in predicting volume, therefore development and validation of efficient volume prediction neural network model is necessary. This package has been developed using the algorithm of Tabassum et al. (2022) <doi:10.18805/ag.D-5555>.

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Encoding UTF-8

Imports stats, MLmetrics, ggplot2, neuralnet

RoxygenNote 7.2.1

Depends R (>= 2.10)

NeedsCompilation no

Repository CRAN

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Description

Neural Networks for Predicting Volume of Forest Trees

Usage

```
ImNN(data, hidden_neurons_range)
```

Arguments

```
data                Datasets
hidden_neurons_range
```
Number of hidden neurons in neural network's two layers (layer 1 and layer 2)

Value

- results: Results

References

- Jeelani, M.I., Tabassum, A., Rather, K and Gul,M.2023. Neural Network Modeling of Height Diameter Relationships for Himalayan Pine through Back Propagation Approach. Journal of The Indian Society of Agricultural Statistics. 76(3): 169–178

- Tabassum, A., Jeelani, M.I., Sharma,M., Rather, K R ., Rashid, I and Gul,M.2022. Predictive Modelling of Height and Diameter Relationships of Himalayan Chir Pine . Agricultural Science Digest - A Research Journal. DOI:10.18805/ag.D-5555

Examples

```
library("ImNN")
data <- system.file("extdata", "data_test.csv", package = "ImNN")
data_test <- read.csv(data)
Model<-ImNN(data =data_test,hidden_neurons_range=2)
```

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