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MATRIX: The First AI-based Forest Growth Model

A self-training, AI-based forest growth model offers 27-55% more accurate and less time-consuming predictions for forest speculation, carbon credits, and climate change impact projections.

Researchers at Purdue University have developed an artificial intelligence-based forest growth

model. For both private entities and the government, estimating forest growth is expensive and

time-consuming because no generalized yet accurate model for forest growth prediction is

available. Growers often end up contracting an expert to calibrate a growth model manually.

Instead, Purdue researchers created a self-trained model that uses mortality, upgrowth, and

recruitment data from different types of forests and geographical regions to predict forest growth

for a forest of a user-specified region and type. Over time and with input, the technology

continually adds and adapts to information to better estimate forest growth and monitor its own

accuracy and/or precision of projections. This technology can be used for forest growth

predictions, forest speculation, climate change impact projections, and/or purchasing of carbon

credits.

Technology Validation:

Technology ID
2022-LIAN-69619

Category
Artificial Intelligence & Machine Learning/Reinforcement & Federated Learning
GreenTech/Carbon Management

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View online

Based on an independent testing dataset, this platform is 27-55% more accurate than

conventional forest growth models.

Advantages:

-Less time-consuming

-Adapts with time and input

-Self-training and updating

Applications:

-Forest Growth

-Climate Change Projections

TRL: 4

Intellectual Property:

Provisional-Patent, 2023-04-18, United States | Provisional-Patent, 2024-04-18, United States

Keywords: artificial intelligence forest growth model, AI forest prediction, self-trained growth model, mortality upgrowth recruitment data, forest speculation, climate change impact projections, carbon credits purchasing, accurate forest growth prediction, forest monitoring, forest growth model validation, Forest Ecology, Forest Growth, Growth Prediction