

Random Forest Result #141 — Analysis Report

Generated 2026-09-21 02:36:31 · 1 run(s) · CAT-G Data Analyzer

1. random forest (#141)

2026-09-21 02:13:18 · random_forest · status: completed

The model explains 35.0% of the variance in the target under cross-validation.

task_type	regression
r2_mean	0.349724
r2_std	0.151744
mse_mean	50.844263
mse_std	2.643804

permutation importance

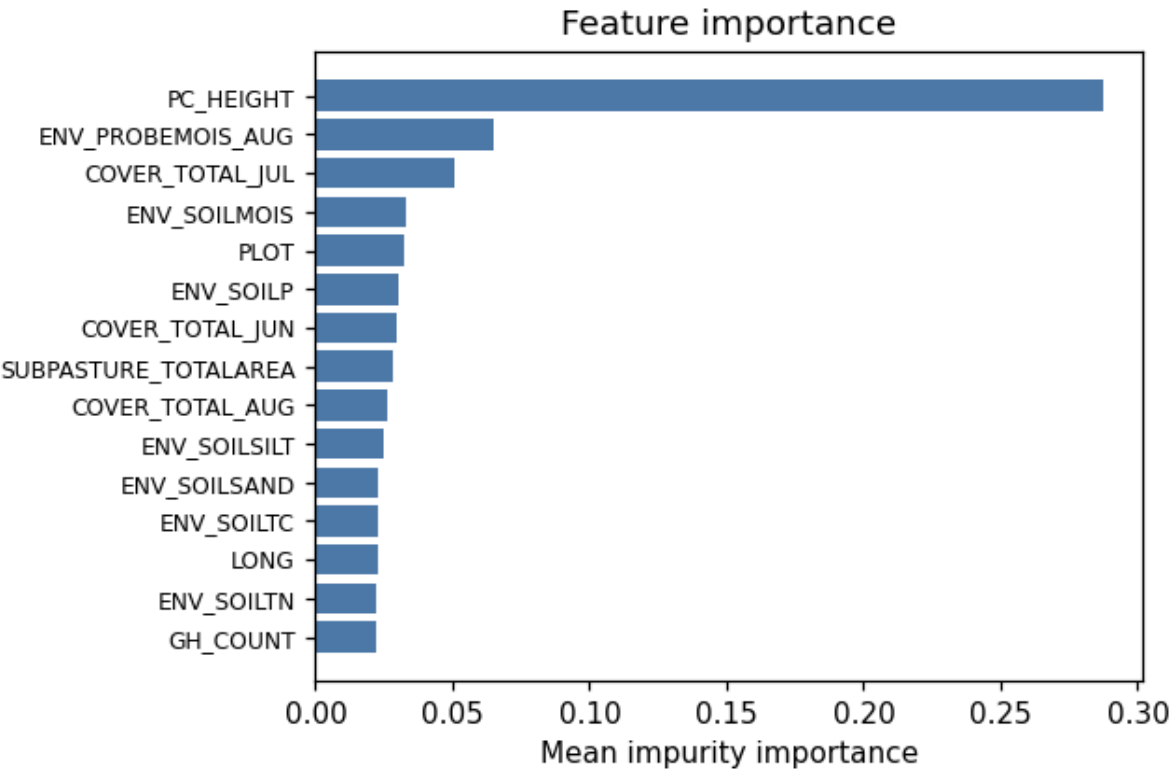
name	mean	std
PLOT	0.009137	0.004065
ENV_SOILNH4	-2.9e-05	0.006682
ENV_SOILNO3	0.002389	0.000391
ENV_SOILP	-0.001287	0.019213
ENV_SOILOC	-0.002492	0.006131
ENV_SOILTN	-0.001218	0.002395
ENV_SOILTC	-0.004529	0.012192
ENV_PH	-0.00026	0.000269
ENV_SOILCLAY	0.000249	0.00296
ENV_SOILSILT	-0.014357	0.015714

shap importance

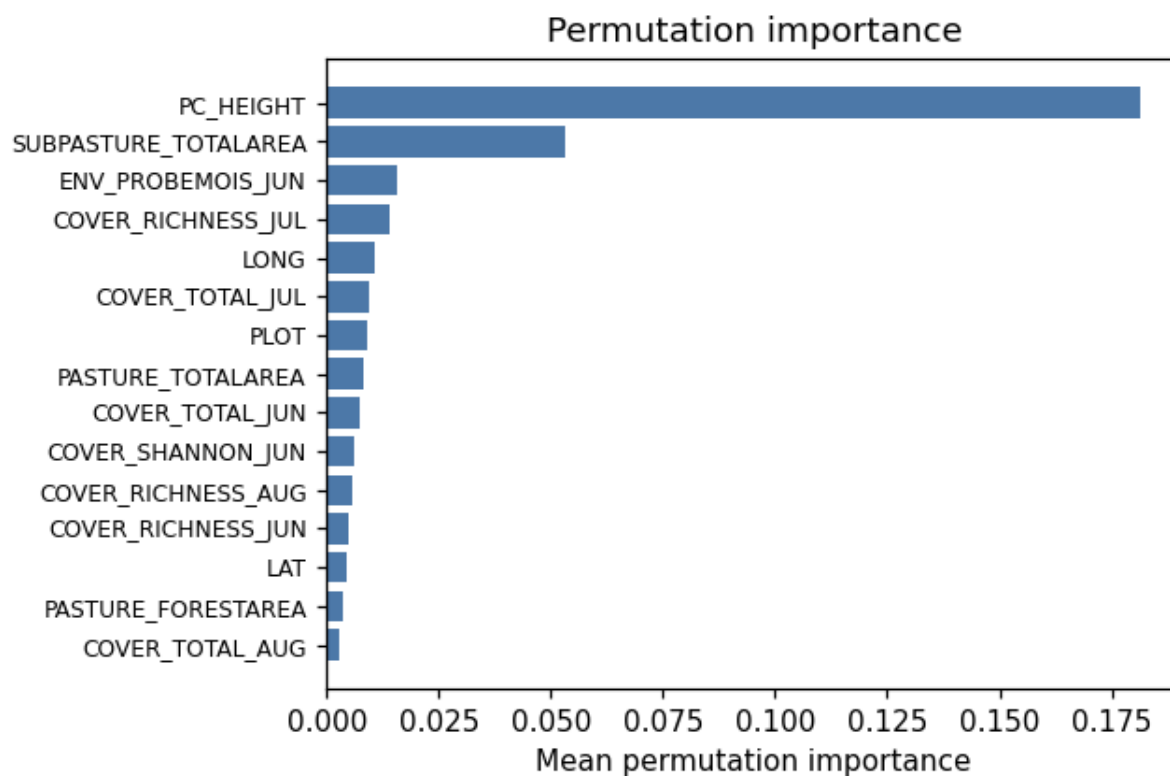
name	mean_abs
PLOT	0.120615
ENV_SOILNH4	0.082636
ENV_SOILNO3	0.088722
ENV_SOILP	0.259756
ENV_SOILOC	0.12071
ENV_SOILTN	0.23526
ENV_SOILTC	0.273367
ENV_PH	0.138988
ENV_SOILCLAY	0.057941
ENV_SOILSILT	0.203845

split metrics

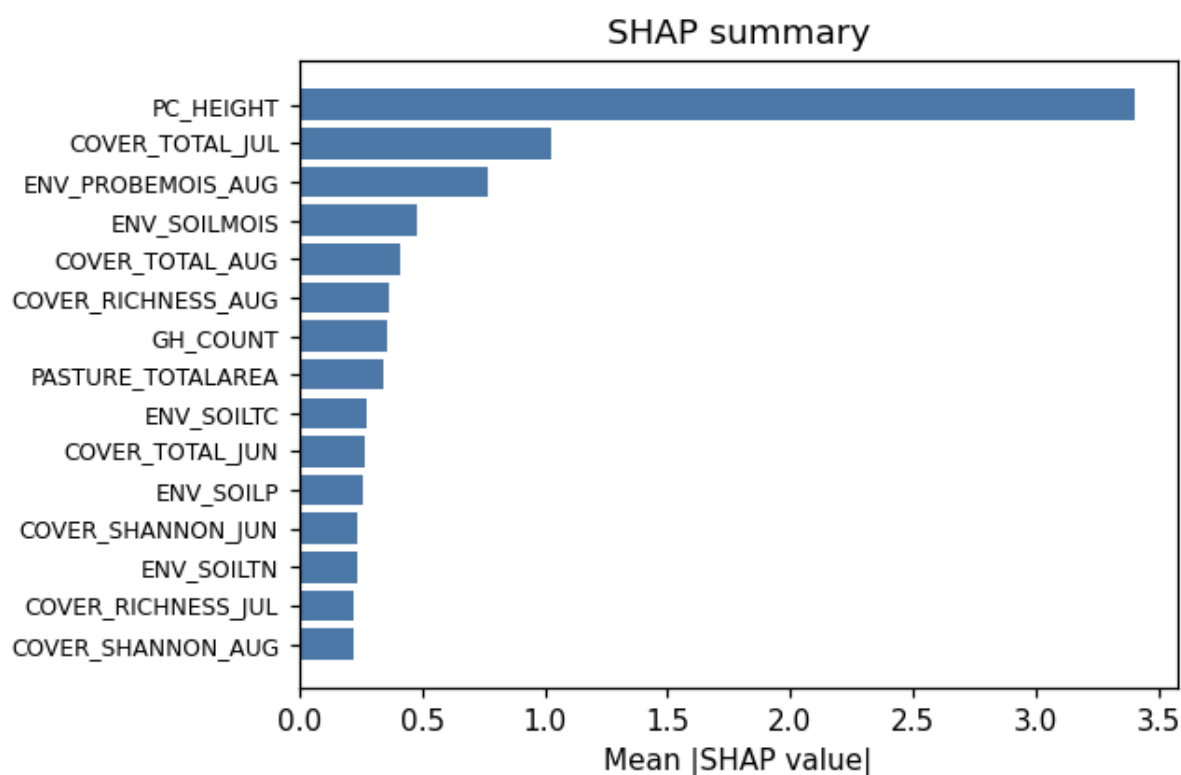
r2	mse
0.541696	54.270766
0.336802	47.835304
0.170674	50.426719



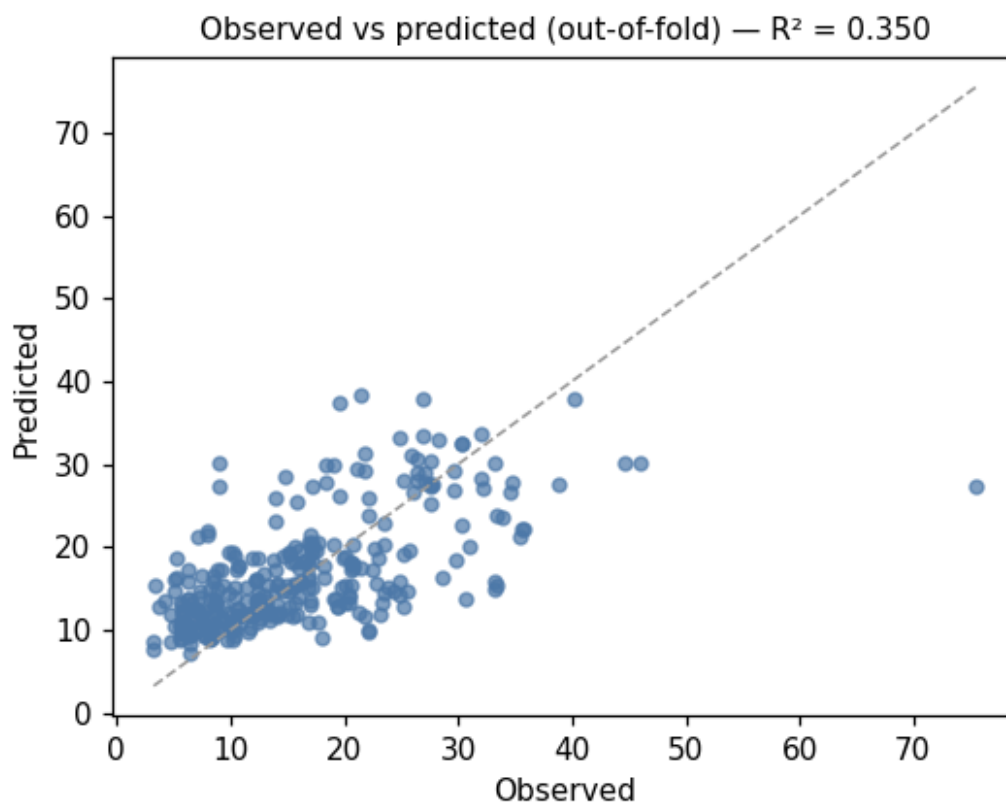
importance bar



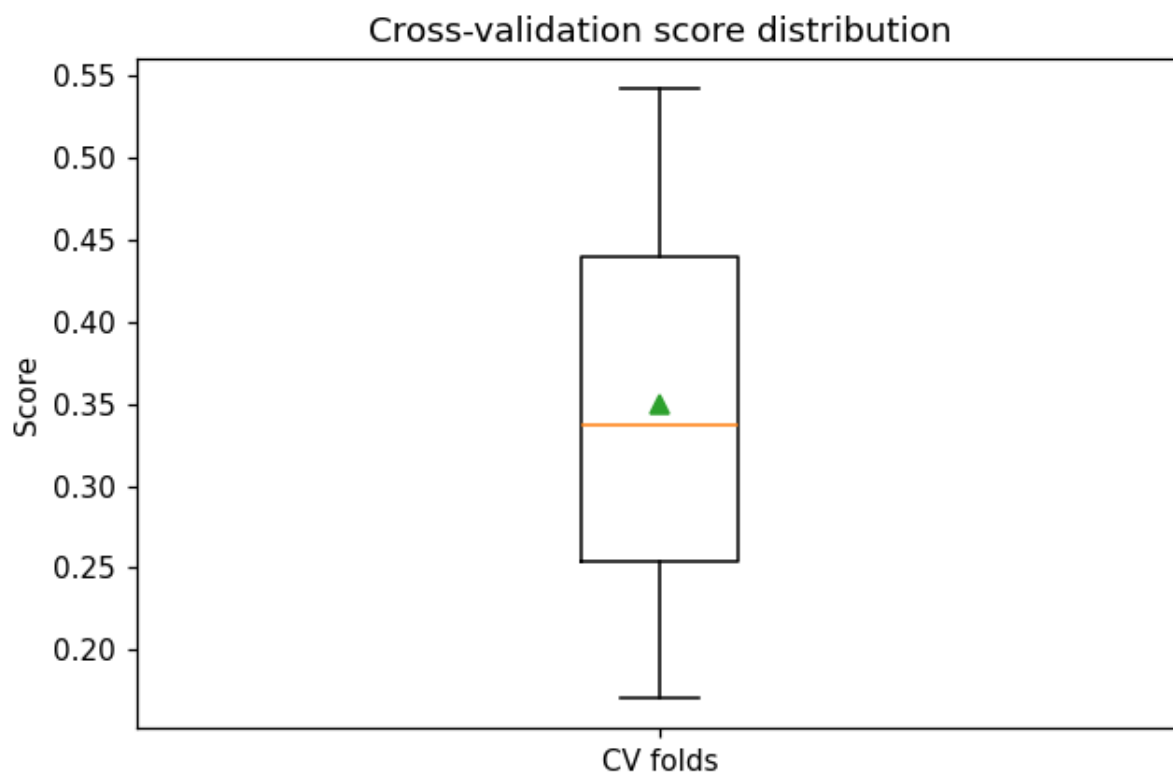
permutation bar



shap summary



pred vs obs



cv boxplot

Method & Provenance

method	Random Forest (Regression)
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engine	Python · scikit-learn 1.8.0
datasets	gallery — catg_example_01_forage_biomass.csv (preprocessed)
started	2026-09-21 02:13:18.142034
permanent link	https://cat-g-omxpert.wishartlab.com/results/by-token/f95ceea32876467a84d79698d140

Parameter	Value
task_type	regression
model_type	regression
target_column	PC_SHOOTMASS
n_estimators	60
n_splits	3
test_size	0.25
run_univariate	True
run_permutation	True
run_shap	True
permutation_repeats	10
fdr_threshold	0.05

Command history

```
# python
from sklearn.ensemble import RandomForestRegressor

# python
model = RandomForestRegressor(n_estimators=60, random_state=42)

# python
scores = sklearn.model_selection.cross_val_score(model, X, y, cv=3)
```