

Random Forest Result #142 — Analysis Report

Generated 2026-09-21 02:36:37 · 1 run(s) · CAT-G Data Analyzer

1. random forest (#142)

2026-09-21 02:13:38 · random_forest · status: completed

The model explains 34.6% of the variance in the target under cross-validation.

task_type	regression
r2_mean	0.345639
r2_std	0.122952
mse_mean	52.232806
mse_std	7.541088

permutation importance

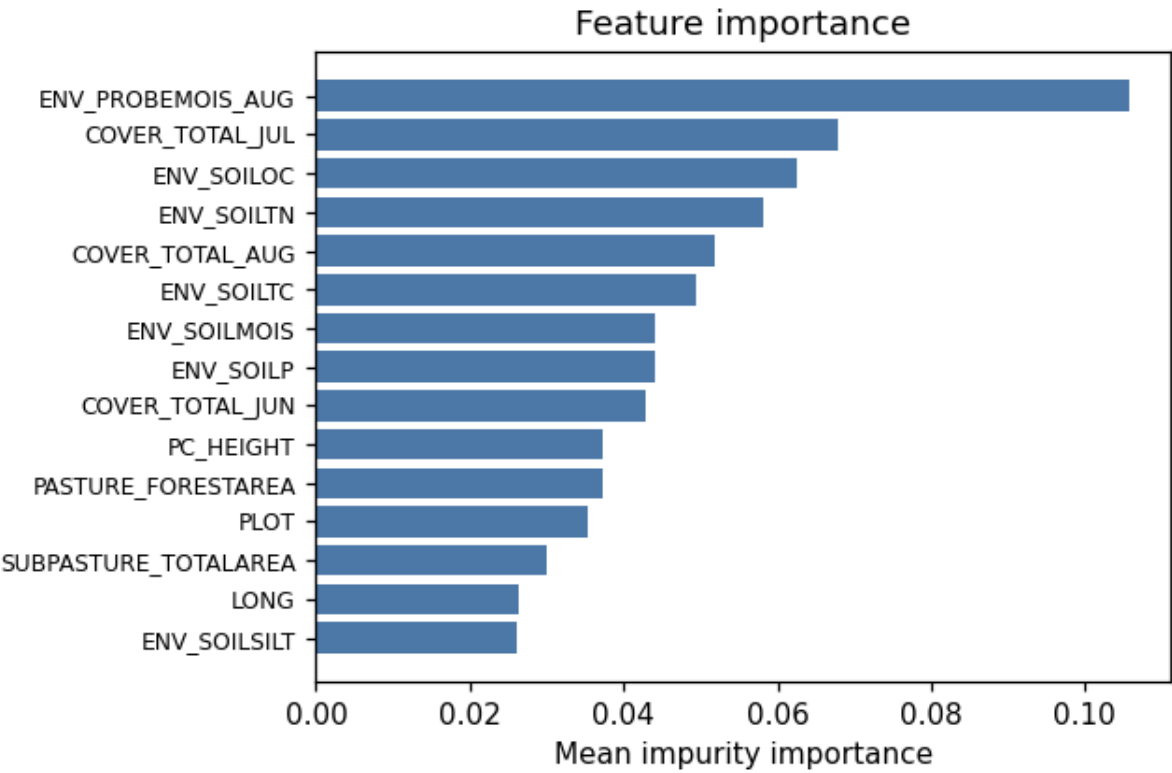
name	mean	std
PLOT	0.021128	0.013875
ENV_SOILNH4	0.001802	0.001265
ENV_SOILNO3	0.003362	0.003329
ENV_SOILP	0.016495	0.003534
ENV_SOILOC	0.009076	0.016
ENV_SOILTN	0.009067	0.012805
ENV_SOILTC	0.014288	0.047237
ENV_PH	0.001249	0.002939
ENV_SOILCLAY	0.003314	0.004583
ENV_SOILSILT	-0.00579	0.007295

shap importance

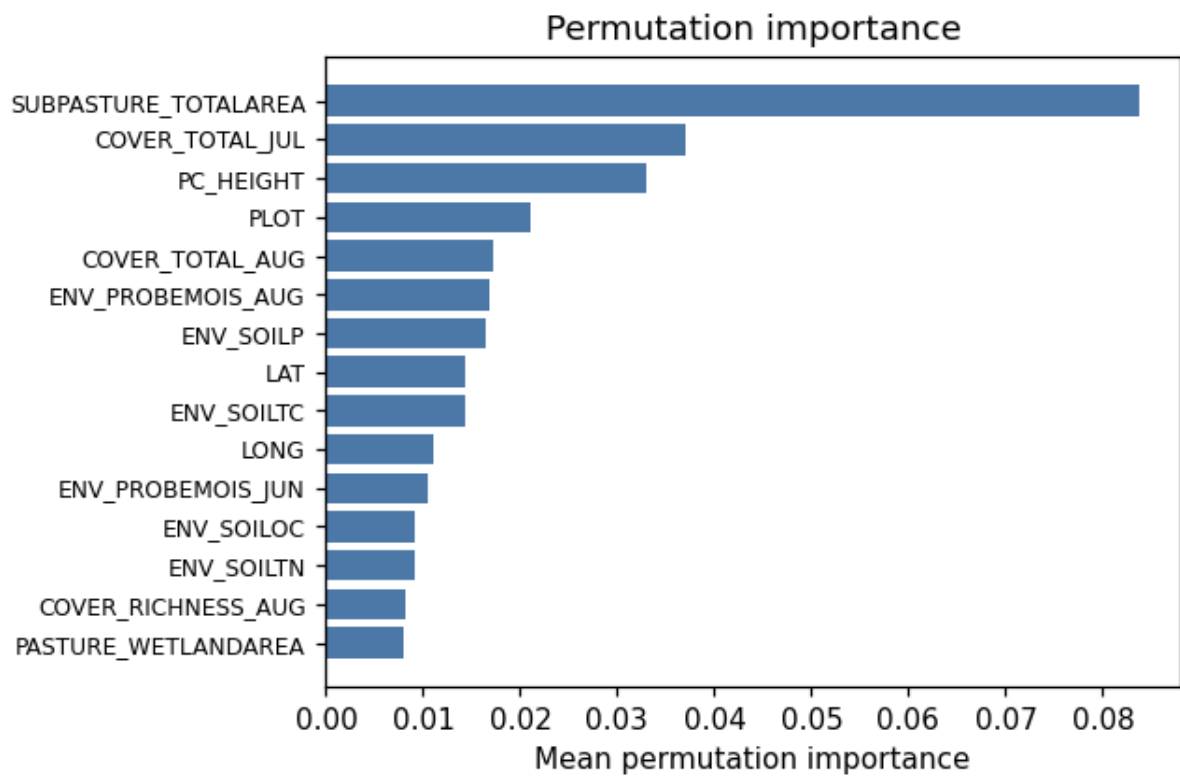
name	mean_abs
PLOT	0.247639
ENV_SOILNH4	0.103296
ENV_SOILNO3	0.094585
ENV_SOILP	0.217172
ENV_SOILOC	0.29234
ENV_SOILTN	0.782153
ENV_SOILTC	0.765265
ENV_PH	0.156054
ENV_SOILCLAY	0.06528
ENV_SOILSILT	0.188871

split metrics

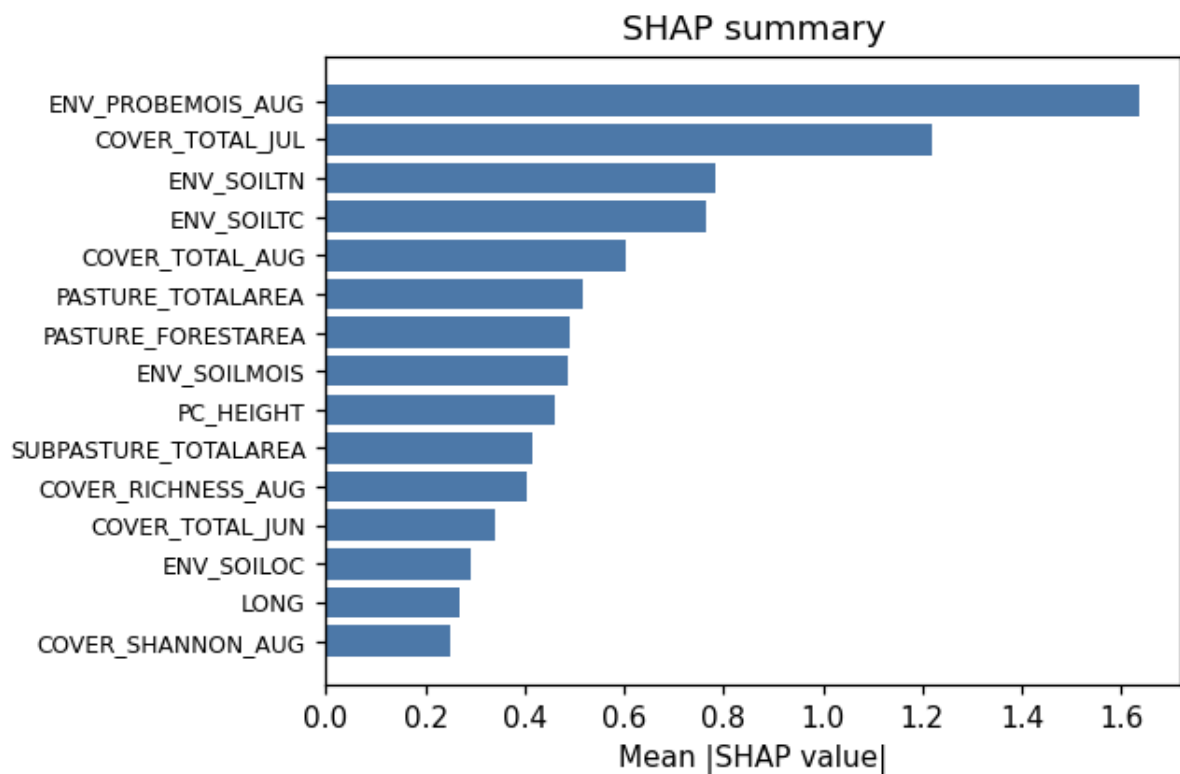
r2	mse
0.472938	62.41285
0.384566	44.390142
0.179412	49.895425



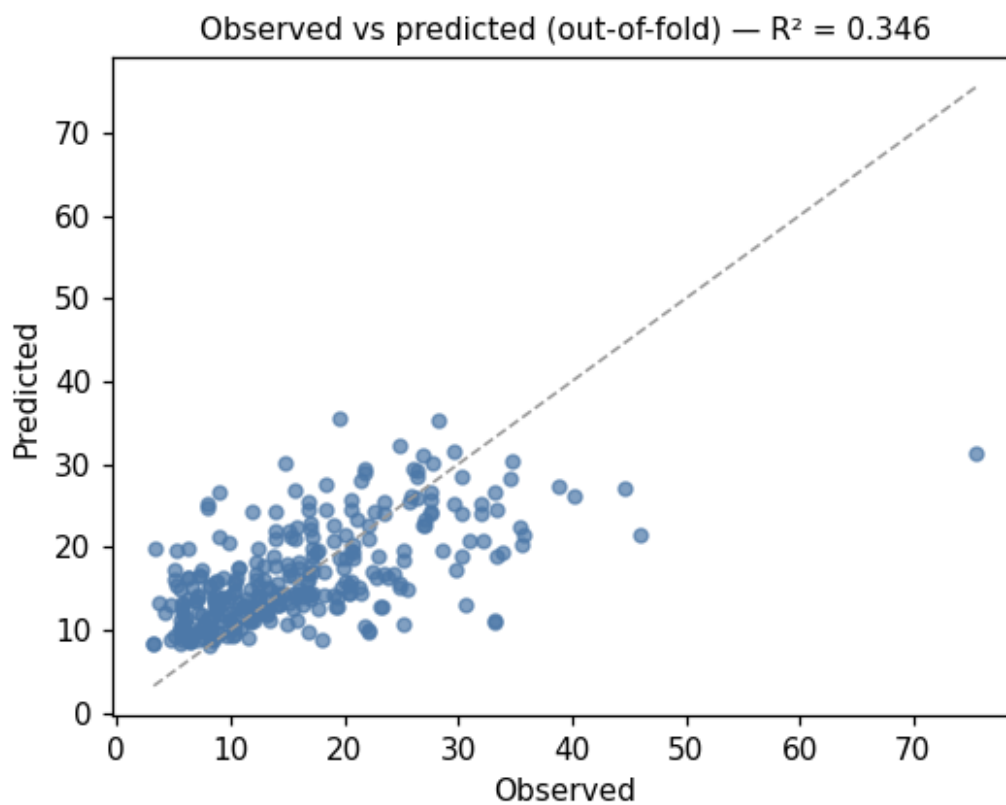
importance bar



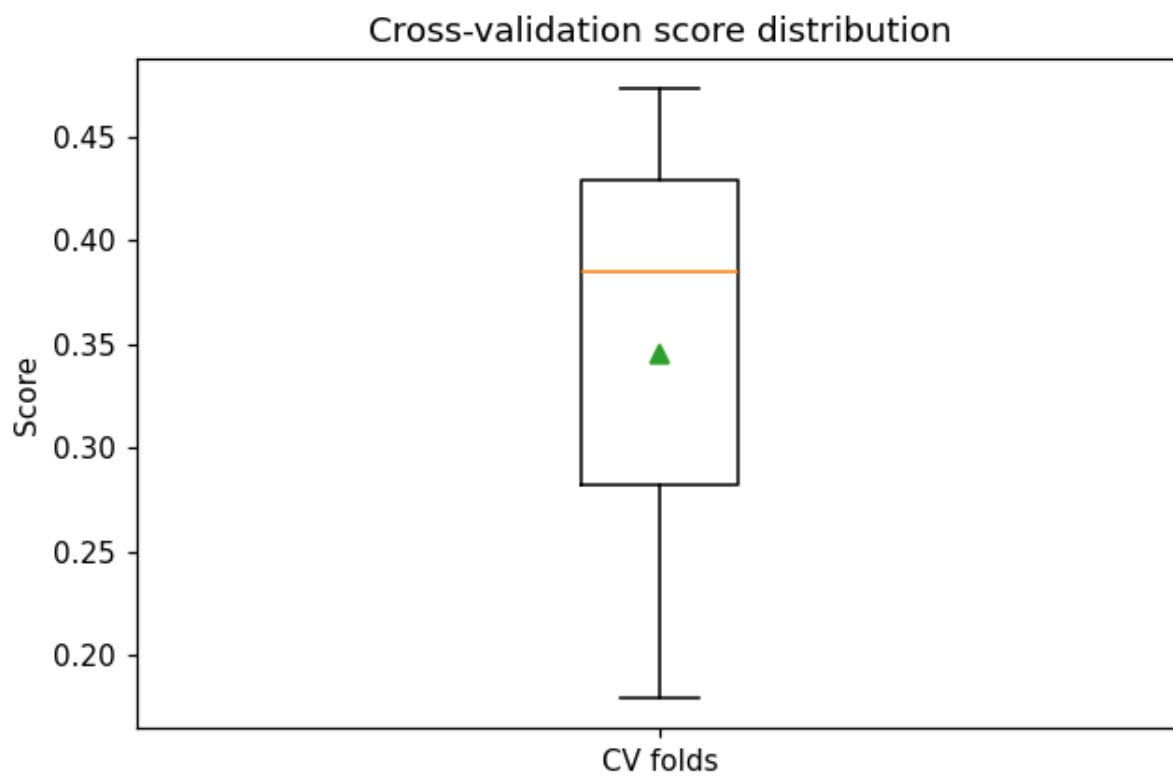
permutation bar



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
started	2026-09-21 02:13:38.003816
permanent link	https://cat-g-omxpert.wishartlab.com/results/by-token/96b7753d8e314763a196bb62042

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)
```