

Random Forest Result #138 — Analysis Report

Generated 2026-09-21 02:35:38 · 1 run(s) · CAT-G Data Analyzer

1. random forest (#138)

2026-09-21 02:11:08 · random_forest · status: completed

The model explains 54.4% of the variance in the target under cross-validation.

task_type	regression
r2_mean	0.544146
r2_std	0.01283
mse_mean	39.370091
mse_std	4.061467

permutation importance

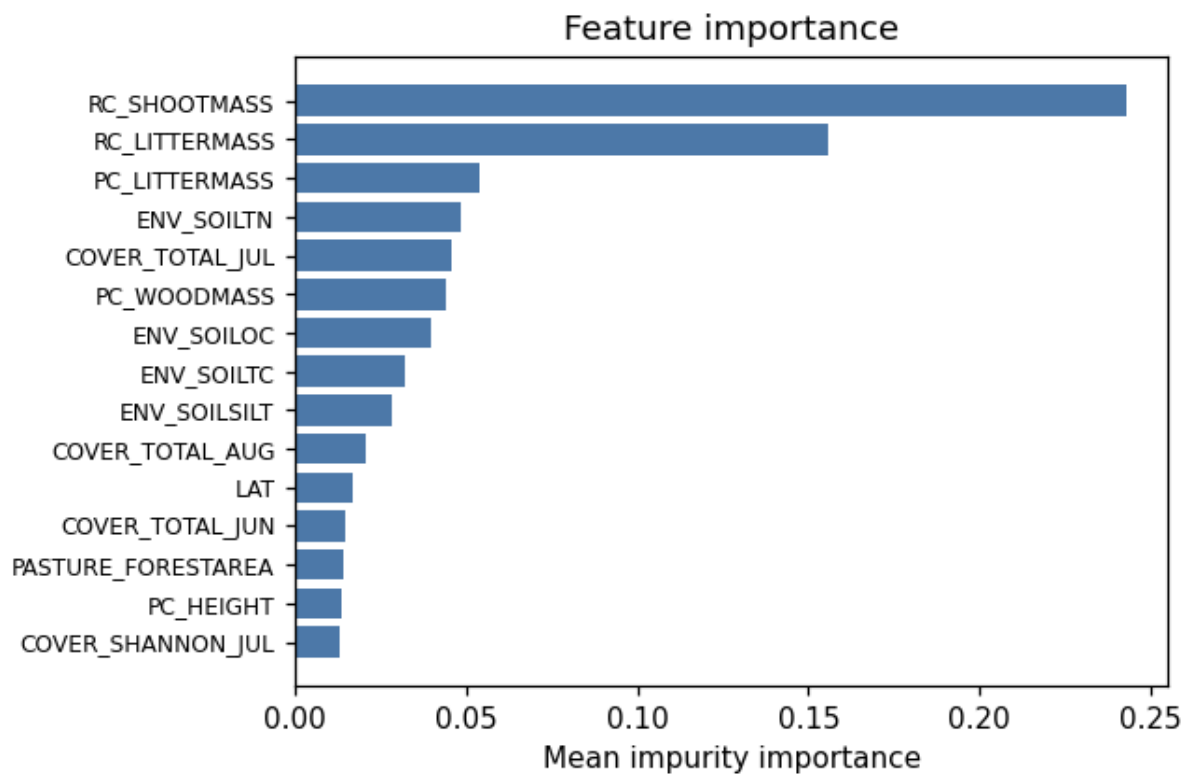
name	mean	std
PLOT	0.000306	0.000724
LAT	0.007732	0.001774
LONG	0.001503	0.00154
ENV_SOILNH4	0.003629	0.002743
ENV_SOILNO3	-0.000594	0.002811
ENV_SOILP	0.000928	0.00248
ENV_SOILOC	0.01288	0.008753
ENV_SOILTN	0.011657	0.002143
ENV_SOILTC	0.00416	0.007555
ENV_PH	-0.002956	0.00333

shap importance

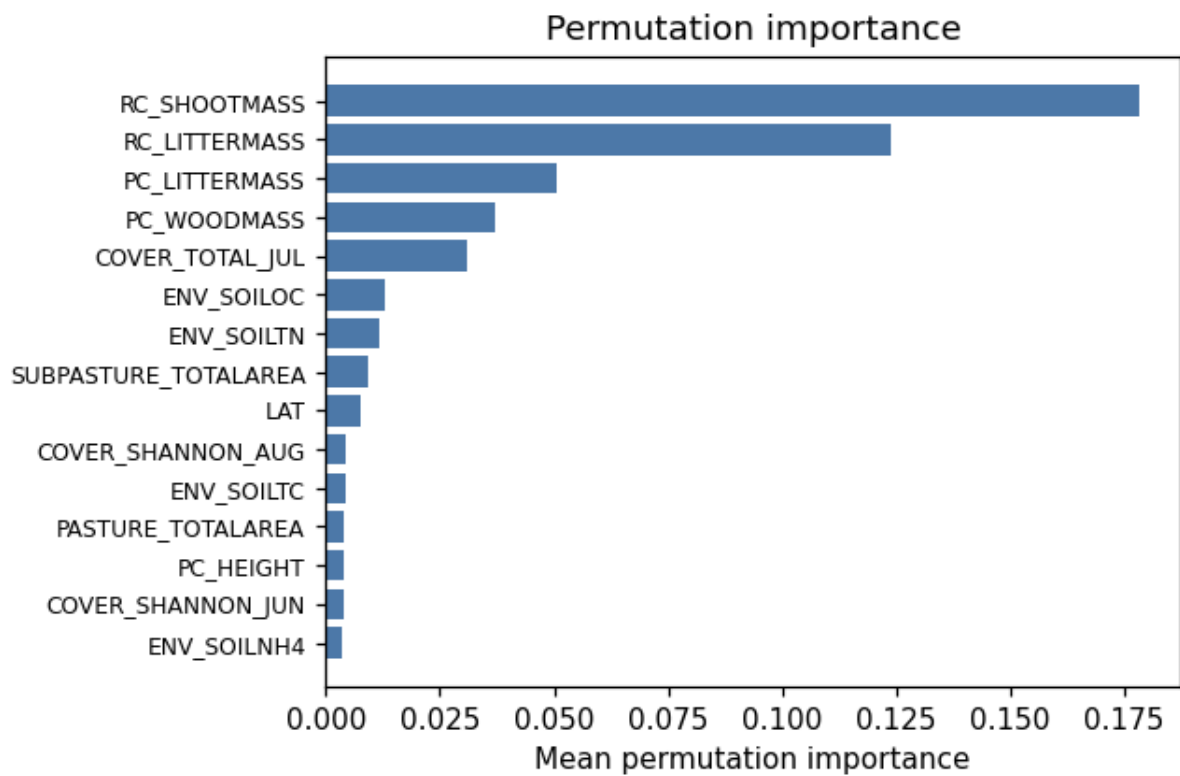
name	mean_abs
PLOT	0.086385
LAT	0.241393
LONG	0.050582
ENV_SOILNH4	0.09909
ENV_SOILNO3	0.068239
ENV_SOILP	0.055237
ENV_SOILOC	0.104043
ENV_SOILTN	0.720728
ENV_SOILTC	0.300837
ENV_PH	0.173977

split metrics

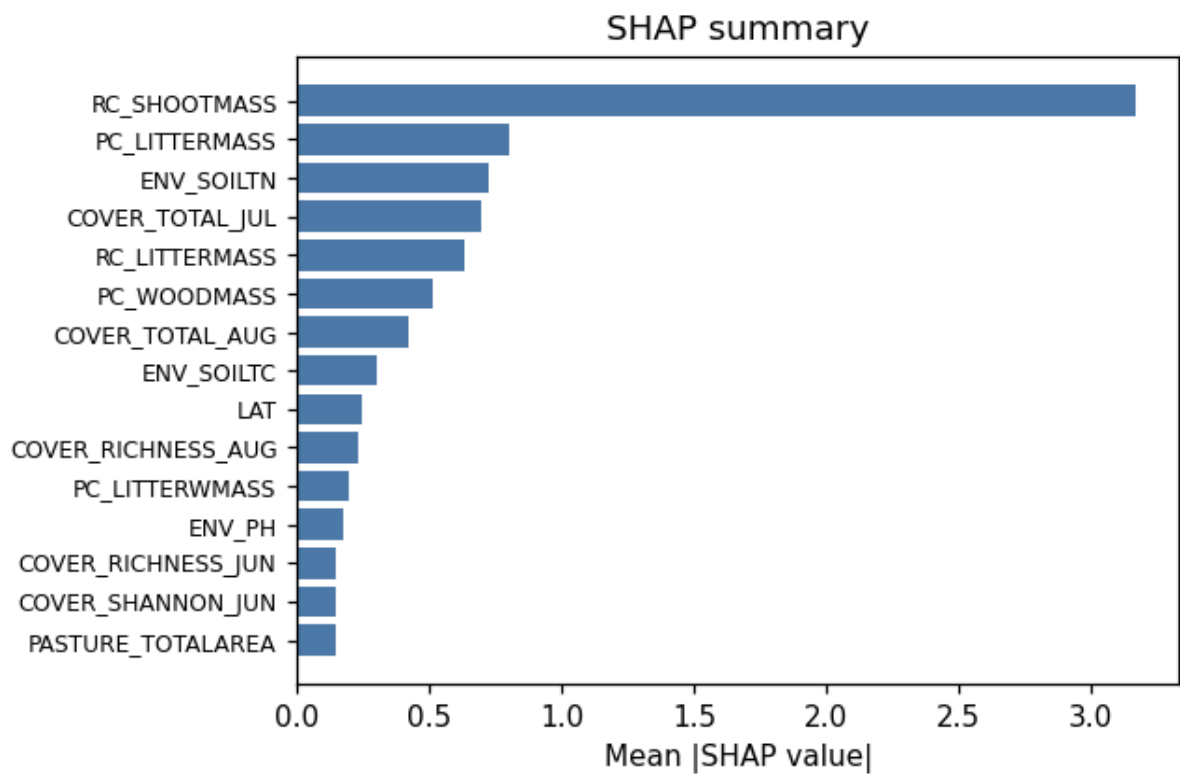
r2	mse
0.559827	44.486553
0.528399	39.072311
0.544211	34.551409



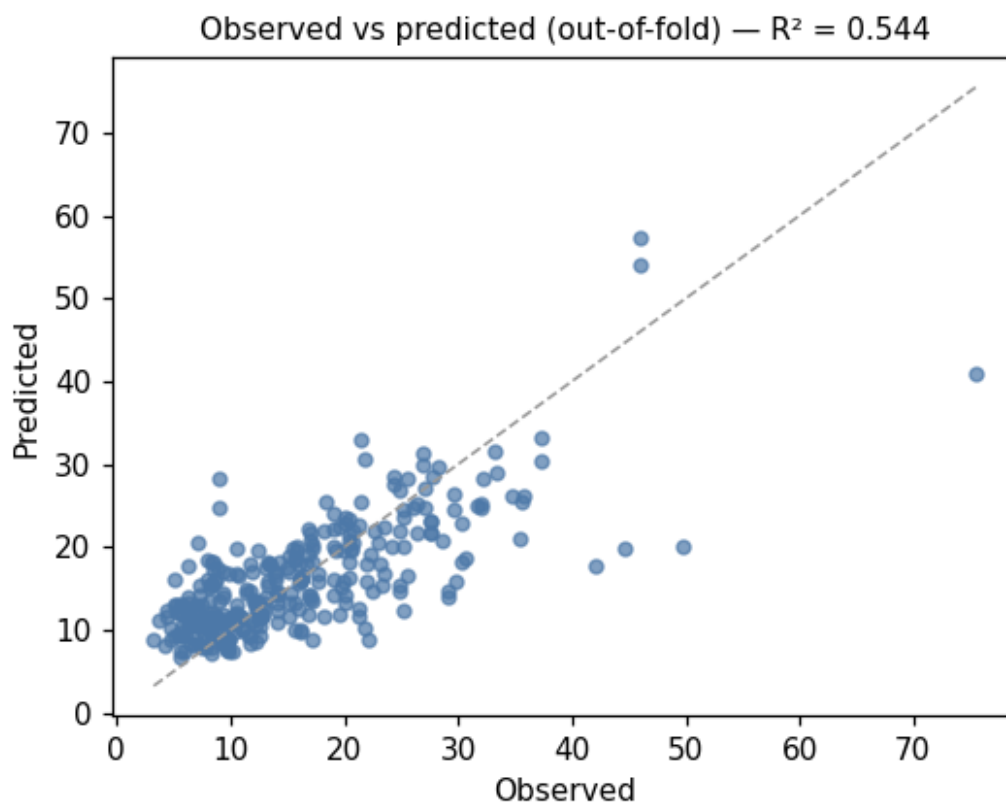
importance bar



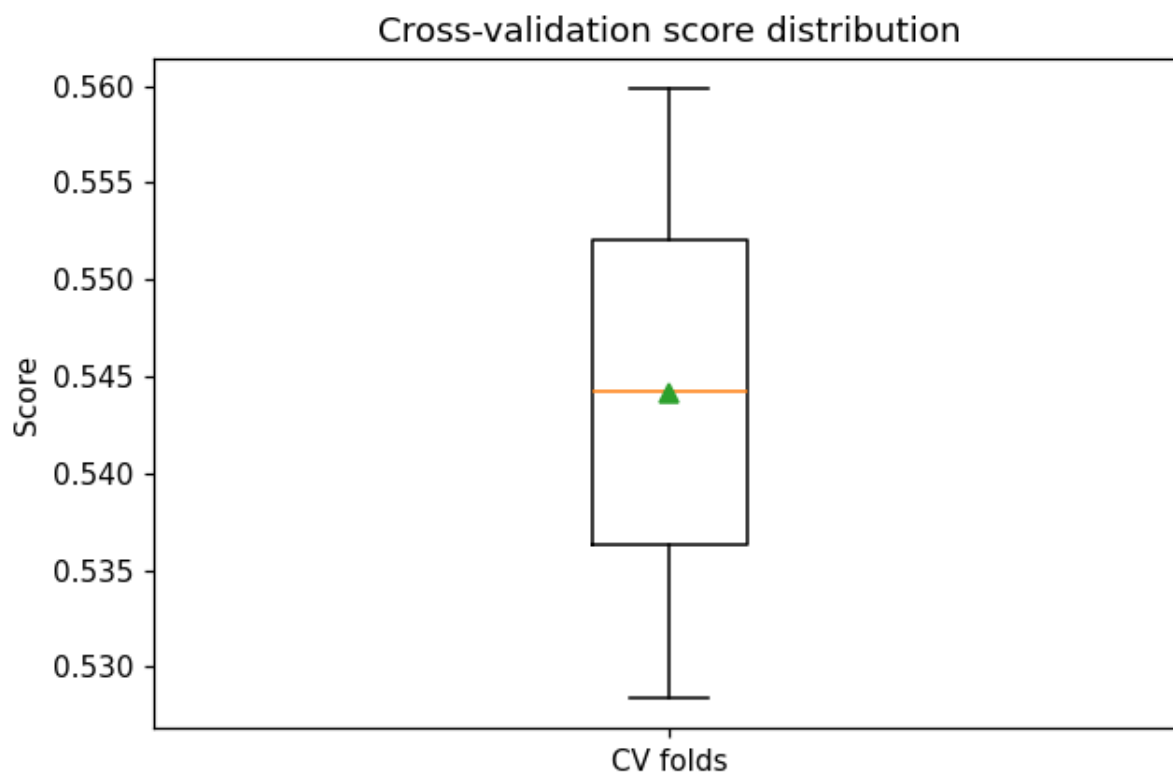
permutation bar



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 — cat_g_field_data_plots.csv
started	2026-09-21 02:11:08.707331
permanent link	https://cat-g-omxpert.wishartlab.com/results/by-token/e38fdc04752c42c5a01d7772f672

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)
```