RELATORIO AUTOML PRO

Data: 06/02/2026 20:44

INFORMACOES DO PROJETO

Dataset: Dataset Processado

Amostras: 1338

Features: 24

Tipo de problema: REGRESSION

Total de modelos treinados: 15

MELHOR MODELO

Modelo: Gradient Boosting

R² Score: 0.8493

RANKING DOS MODELOS

Posicao	Modelo	Score
1	Gradient Boosting	0.8493
2	Random Forest	0.8396
3	LightGBM	0.8252
4	Extra Trees	0.8212
5	XGBoost	0.8122
6	AdaBoost	0.8086
7	Ridge	0.7456
8	Bayesian Ridge	0.7456
9	Linear Regression	0.7454
10	Lasso	0.7454

11	Decision Tree	0.7425
12	ElasticNet	0.7114
13	MLP Regressor	0.1651
14	KNN Regressor	0.0960
15	SVR RBF	-0.1061

METRICAS DETALHADAS

Modelo: Random Forest

r2: 0.8396

r2_std: 0.0282

neg_mean_squared_error: -22606355.9638

neg_mean_squared_error_std: 2022105.3306

neg_mean_absolute_error: -2575.0846

neg_mean_absolute_error_std: 117.5194

rmse: 4754.6142

rmse_std: 1422.0075

mae: 2575.0846

mae_std: 117.5194

fit_time: 1.6913

score_time: 0.0408

n_folds: 5.0000

Modelo: Gradient Boosting

r2: 0.8493

r2_std: 0.0308

neg_mean_squared_error: -21144971.5146

neg_mean_squared_error_std: 2214626.8153

neg_mean_absolute_error: -2536.6558

neg_mean_absolute_error_std: 99.8776

rmse: 4598.3662

rmse_std: 1488.1622

mae: 2536.6558

mae_std: 99.8776

fit_time: 0.7295

score_time: 0.0041

n_folds: 5.0000

weighted_score: 0.8208

Modelo: AdaBoost

r2: 0.8086

r2_std: 0.0308

neg_mean_squared_error: -27073881.5332

neg_mean_squared_error_std: 3162442.7984

neg_mean_absolute_error: -4097.2356

neg_mean_absolute_error_std: 425.9138

rmse: 5203.2568

rmse_std: 1778.3258

mae: 4097.2356

mae_std: 425.9138

fit_time: 0.1508

score_time: 0.0092

n_folds: 5.0000

Modelo: Extra Trees

r2: 0.8212

r2_std: 0.0301

neg_mean_squared_error: -25229221.4390

neg_mean_squared_error_std: 2390541.9847

neg_mean_absolute_error: -2698.6990

neg_mean_absolute_error_std: 152.0613

rmse: 5022.8698

rmse_std: 1546.1378

mae: 2698.6990

mae_std: 152.0613

fit_time: 1.9969

score_time: 0.0585

n_folds: 5.0000

Modelo: Linear Regression

r2: 0.7454

r2_std: 0.0538

neg_mean_squared_error: -35636345.2614

neg_mean_squared_error_std: 2323090.6528

neg_mean_absolute_error: -4249.7409

neg_mean_absolute_error_std: 104.2607

rmse: 5969.6185

rmse_std: 1524.1688

mae: 4249.7409

mae_std: 104.2607

fit_time: 0.0069

score_time: 0.0067

n_folds: 5.0000

Modelo: Ridge

r2: 0.7456

r2_std: 0.0530

neg_mean_squared_error: -35618933.9830

neg_mean_squared_error_std: 2261319.3516

neg_mean_absolute_error: -4254.6377

neg_mean_absolute_error_std: 99.9851

rmse: 5968.1600

rmse_std: 1503.7684

mae: 4254.6377

mae_std: 99.9851

fit_time: 0.0143

score_time: 0.0057

n_folds: 5.0000

Modelo: Lasso

r2: 0.7454

r2_std: 0.0538

neg_mean_squared_error: -35633544.5730

neg_mean_squared_error_std: 2322813.9566

neg_mean_absolute_error: -4249.3500

neg_mean_absolute_error_std: 104.1822

rmse: 5969.3839

rmse_std: 1524.0781

mae: 4249.3500

mae_std: 104.1822

fit_time: 0.0776

score_time: 0.0070

n_folds: 5.0000

Modelo: ElasticNet

r2: 0.7114

r2_std: 0.0314

neg_mean_squared_error: -40961230.4801

neg_mean_squared_error_std: 2513160.1248

neg_mean_absolute_error: -4746.3710

neg_mean_absolute_error_std: 122.2467

rmse: 6400.0961

rmse_std: 1585.2950

mae: 4746.3710

mae_std: 122.2467

fit_time: 0.0083

score_time: 0.0041

n_folds: 5.0000

Modelo: Bayesian Ridge

r2: 0.7456

r2_std: 0.0529

neg_mean_squared_error: -35623137.2533

neg_mean_squared_error_std: 2247425.9127

neg_mean_absolute_error: -4257.2847

neg_mean_absolute_error_std: 98.6925

rmse: 5968.5121

rmse_std: 1499.1417

mae: 4257.2847

mae_std: 98.6925

fit_time: 0.0349

score_time: 0.0059

n_folds: 5.0000

Modelo: SVR RBF

r2: -0.1061

r2_std: 0.0244

neg_mean_squared_error: -159092732.9060

neg_mean_squared_error_std: 21159243.5587

neg_mean_absolute_error: -8324.0630

neg_mean_absolute_error_std: 467.0020

rmse: 12613.1968

rmse_std: 4599.9178

mae: 8324.0630

mae_std: 467.0020

fit_time: 0.2145

score_time: 0.0973

n_folds: 5.0000

Modelo: KNN Regressor

r2: 0.0960

r2_std: 0.0269

neg_mean_squared_error: -130125930.2168

neg_mean_squared_error_std: 18205282.2095

neg_mean_absolute_error: -7989.7969

neg_mean_absolute_error_std: 446.9155

rmse: 11407.2753

rmse_std: 4266.7648

mae: 7989.7969

mae_std: 446.9155

fit_time: 0.0010

score_time: 0.7426

n_folds: 5.0000

Modelo: Decision Tree

r2: 0.7425

r2_std: 0.0365

neg_mean_squared_error: -36392245.7374

neg_mean_squared_error_std: 1585680.4251

neg_mean_absolute_error: -2996.8739

neg_mean_absolute_error_std: 93.0134

rmse: 6032.5986

rmse_std: 1259.2380

mae: 2996.8739

mae_std: 93.0134

fit_time: 0.0215

score_time: 0.0020

n_folds: 5.0000

Modelo: XGBoost

r2: 0.8122

r2_std: 0.0331

neg_mean_squared_error: -26465412.6046

neg_mean_squared_error_std: 2440761.9023

neg_mean_absolute_error: -2867.3832

neg_mean_absolute_error_std: 168.9232

rmse: 5144.4545

rmse_std: 1562.2938

mae: 2867.3832

mae_std: 168.9232

fit_time: 0.6810

score_time: 0.0103

n_folds: 5.0000

Modelo: LightGBM

r2: 0.8252

r2_std: 0.0341

neg_mean_squared_error: -24571871.9372

neg_mean_squared_error_std: 2420310.7765

neg_mean_absolute_error: -2870.7000

neg_mean_absolute_error_std: 167.4615

rmse: 4957.0023

rmse_std: 1555.7348

mae: 2870.7000

mae_std: 167.4615

fit_time: 3.1537

score_time: 0.0182

n_folds: 5.0000

Modelo: MLP Regressor

r2: 0.1651

r2_std: 0.0254

neg_mean_squared_error: -119653248.9816

neg_mean_squared_error_std: 13028642.4100

neg_mean_absolute_error: -8071.2400

neg_mean_absolute_error_std: 300.1858

rmse: 10938.6128

rmse_std: 3609.5211

mae: 8071.2400

mae_std: 300.1858

fit_time: 11.5807

score_time: 0.0038

n_folds: 5.0000

RECOMENDACOES

1. Implemente o melhor modelo em producao
2. Monitore performance periodicamente
3. Re-treine com novos dados regularmente
4. Considere tecnicas de ensemble
5. Valide com testes A/B antes de deploy