Previsão do Score

HONG KONG

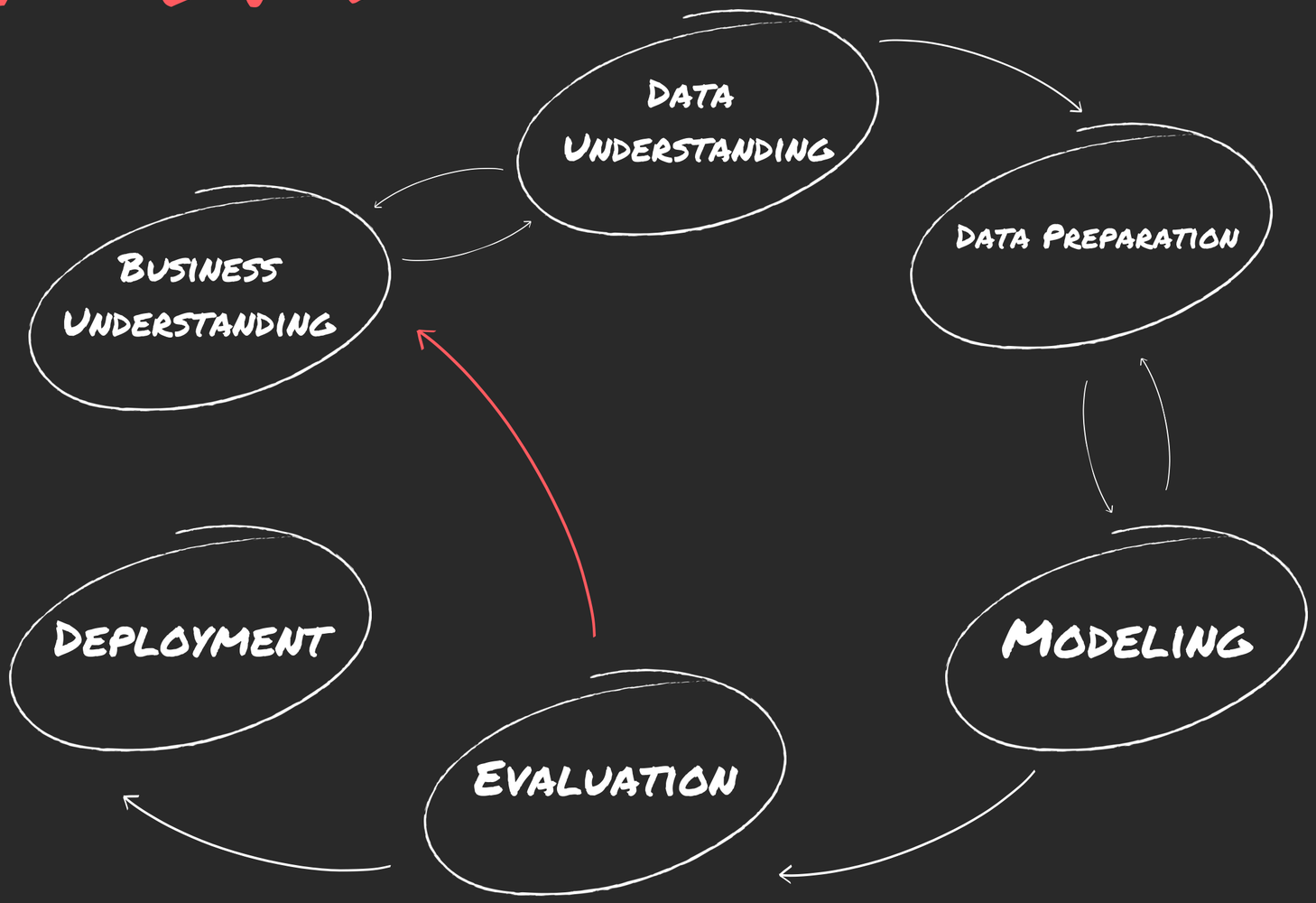
Equipa

Guilherme Mendonça

Marta Neves

René Porto

CRISP-DM


Data Understanding
Data Preparation
Modeling
Evaluation
Deployment
Business Understanding

04

Business understanding

- Objetivo do Airbnb
- Avaliação detalhada
- Objetivo técnico
- Plano do projeto

04

Data Understanding

05

Criação dos URL's

Procura de alojamentos

Extração de variáveis

06

Data Preparation

- 17.112 acomodações
- Valores omissos
- Tipo de acomodação
- Outliers
- Correlação

06

Modeling

Regressão Linear - Múltipla

AD - Bagging

Rede Neuronal

Regressão Linear - Múltipla (VC)

AD - Boosting

Árvore de Decisão

AD - Florestas Aleatórias

07

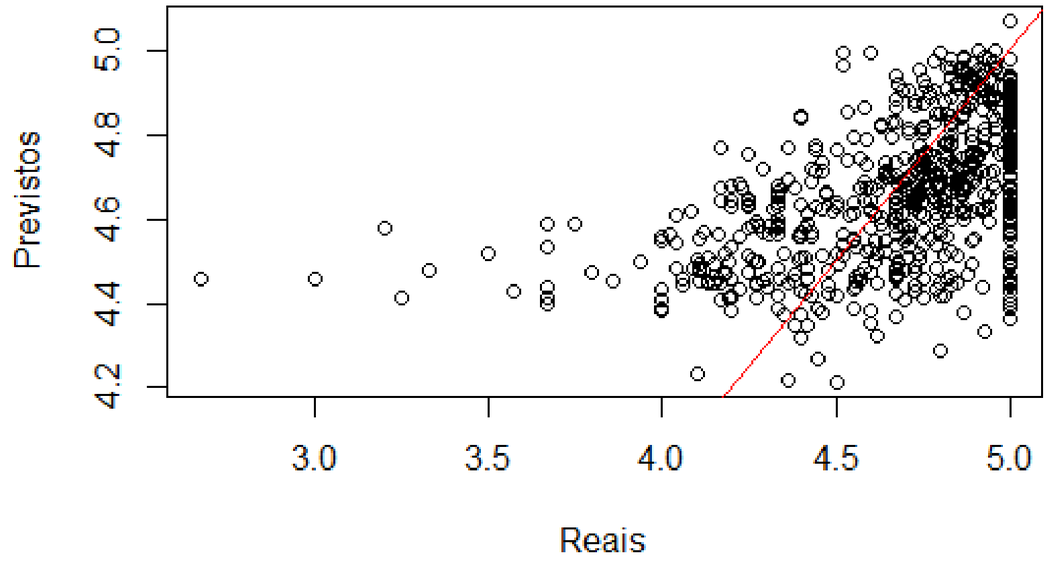
Regressão Linear

0,286

Redução de variáveis (p.value) > 0.05

Treino (70%) e Teste (30%)

Validação Cruzada

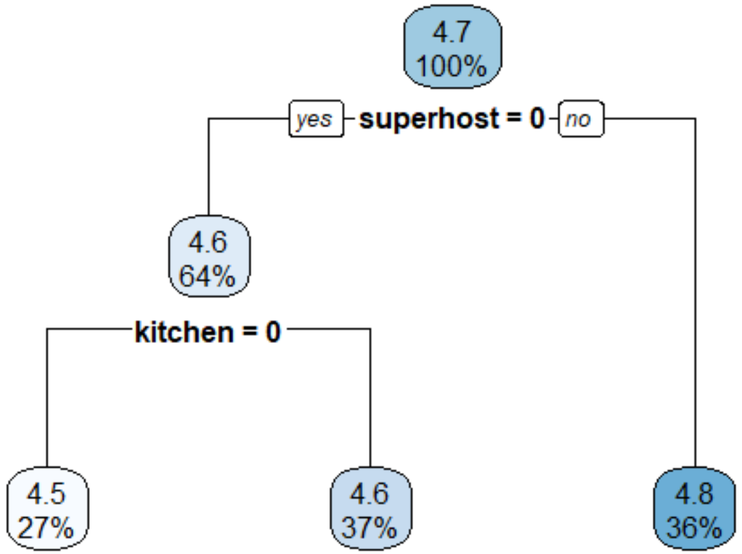


08

Árvore de Decisão

0,286

Poda (cp = 0.025)



09

Árvore de Decisão

nbagg	RMSE	R-Square
100	0.2932	0.2526
200	0.2938	0.245
300	0.2937	0.2503
500	0.2932	0.2507

Árvore de Decisão

		RMSE	R-square
1º	Depth=3 n.trees=1000 Shrinkage=0.02 n.minobsinnode= 20	0.2927	0.2535
2º	Depth=2 n.trees=500 Shrinkage=0.05 n.minobsinnode= 15	0.2919	0.2564
3º	Depth=2 n.trees=500 Shrinkage=0.05 n.minobsinnode= 5	0.2923	0.2529snii
4º	Depth=2 n.trees=300 Shrinkage=0.05 n.minobsinnode= 5	0.2894	0.2707
5º	Depth=2 n.trees=1000 Shrinkage=0.02 n.minobsinnode= 20	**0.2874**	**0.2749**

Árvore de Decisão

FLORESTAS ALEATÓRIAS

0,288

mtry	splitrule	RMSE	Rsquared	MAE
2	variance	0.2882932	0.2886527	0.2042981
2	extratrees	0.2905099	0.2788480	0.2057411
5	variance	0.2877067	0.2753290	0.2019657
5	extratrees	0.2877417	0.2747828	0.2016227
9	variance	0.2966053	0.2445166	0.2076130
9	extratrees	0.2940619	0.2549461	0.2051103
13	variance	0.3017568	0.2290373	0.2106326
13	extratrees	0.2984459	0.2431941	0.2078306
17	variance	0.3044577	0.2220346	0.2126835
17	extratrees	0.3016974	0.2341544	0.2099348

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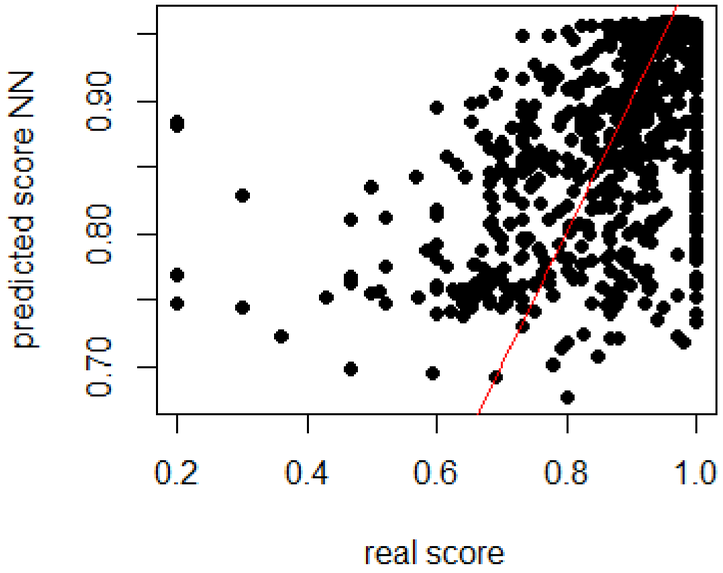
Redes Neuronais

0,117

Redução de variáveis

Normalização

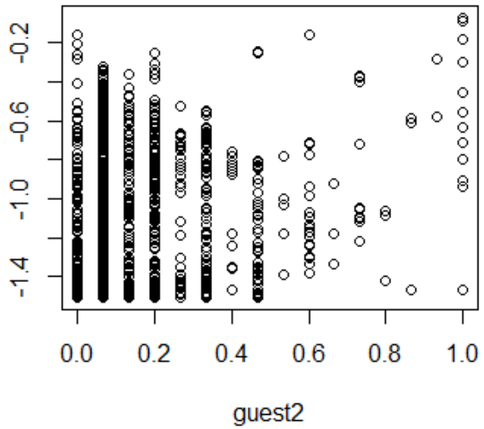
Treino (70%) e Teste (30%)

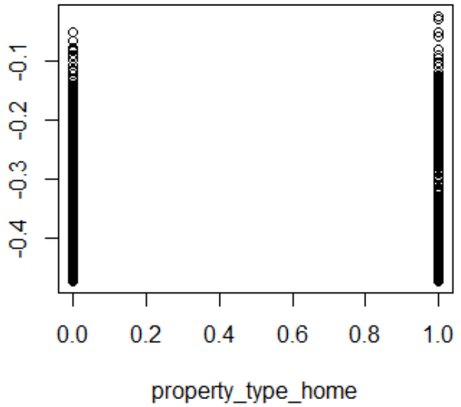


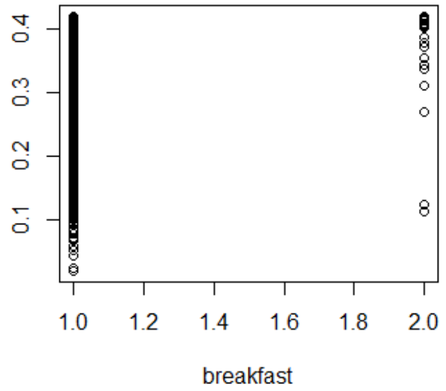
Tentativa	%Treino	%Teste	Hidden	Algoritmo	Tx.Aprendizagem	RMSE	MAPE
1	70	30	1,20	backprop	0.001	0.1179	0.1245
2	**70**	**30**	**1,30**	**backprop**	**0.001**	**0.1178**	**0.1245**
3	70	30	1,50	backprop	0.001	0.1179	0.1245
4	70	30	10,10	backprop	0.001	0.1331	0.1286
5	70	30	20,20	backprop	0.001	0.1362	0.1306

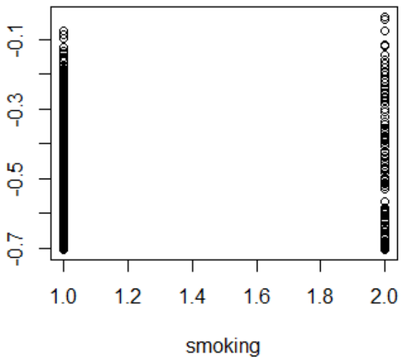
Redes Neuronais

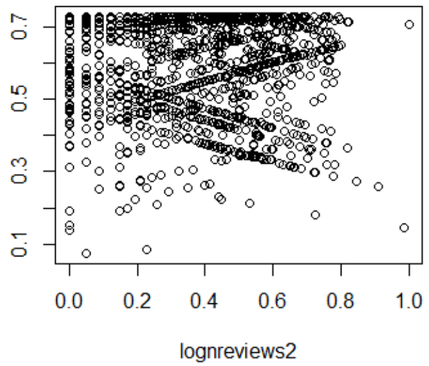
IMPORTÂNCIA DAS VARIÁVEIS

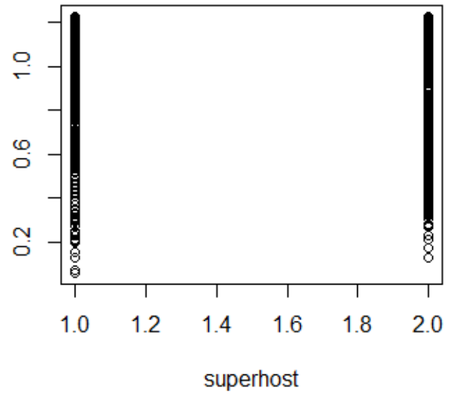












Evaluation

Regressão Linear - Múltipla → 0,286

AD - Bagging → 0,288

Regressão Linear - Múltipla (VC) → 0,286

AD - Boosting → 0,287

Árvore de Decisão → 0,290

AD - Florestas Aleatórias → 0,288

Rede Neuronal → 0,117

Deployment

Clique para prever o futuro!

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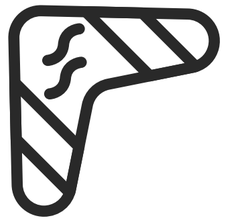
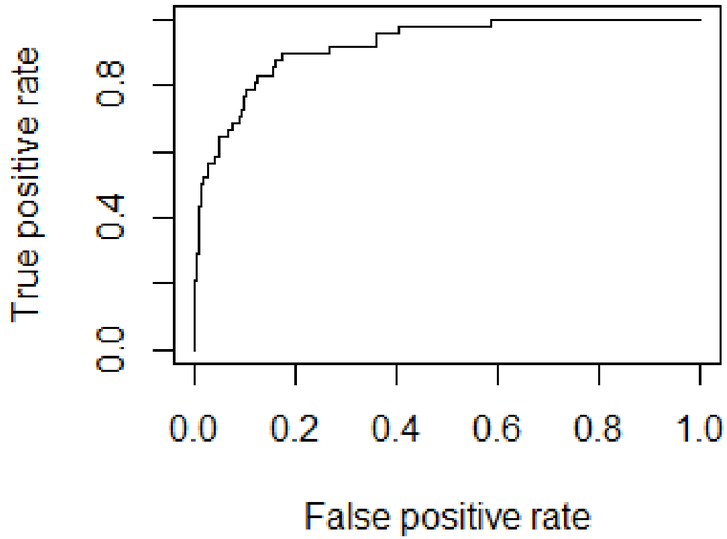
Questão 2

Rain in Autralia



Regressão Logística
AUC 0,9233



Questões?