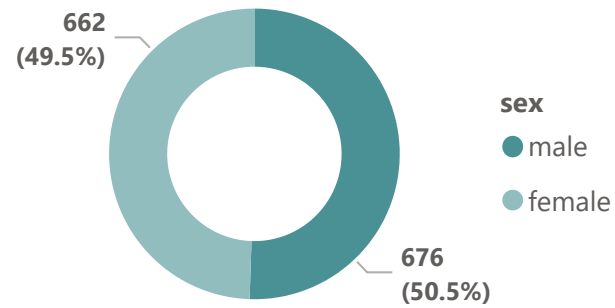




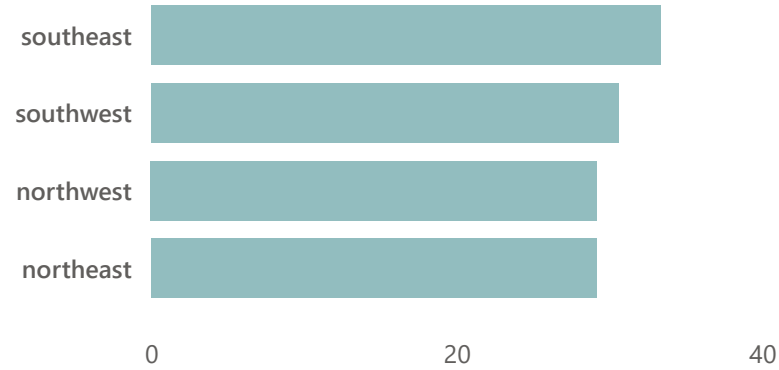
Medical Cost Prediction Using Machine Learning

Medical Cost Prediction Analysis

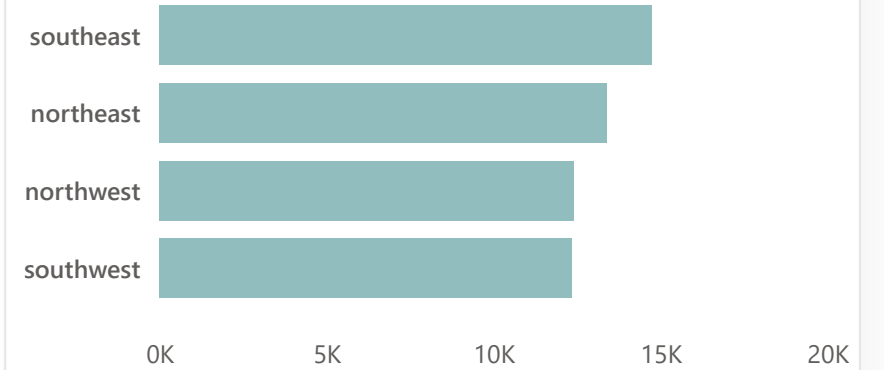
Gender Count



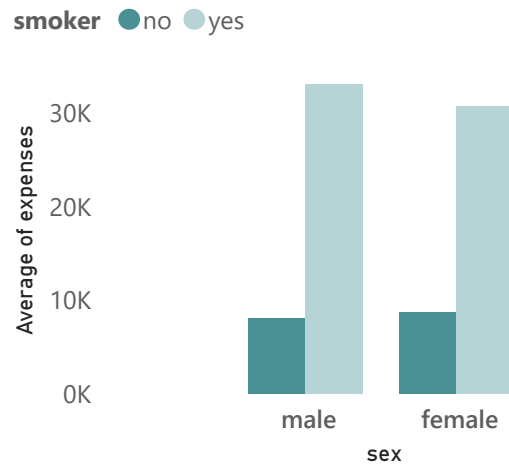
Average bmi by region



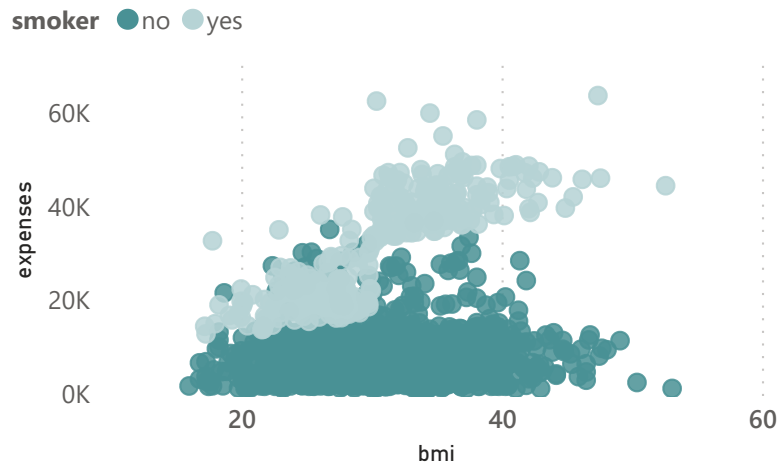
Average expenses by region



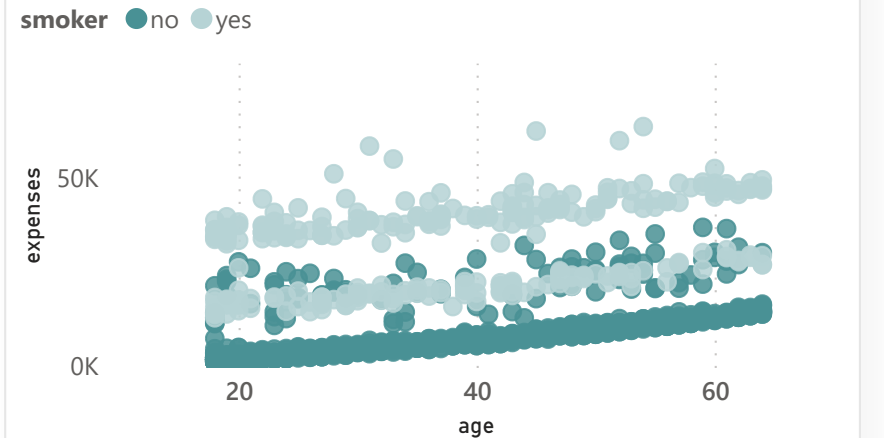
Average expenses by Gender/smoker



Expenses vs Bmi/Smoker



Expenses vs Age/Smoker



Model Selection

Select all

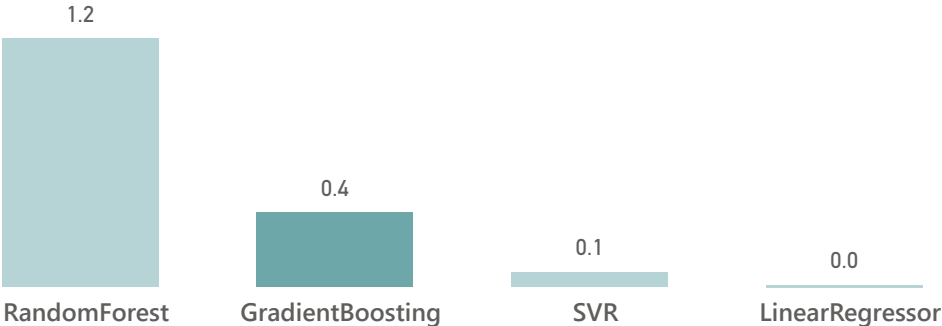
GradientBoosting

LinearRegressor

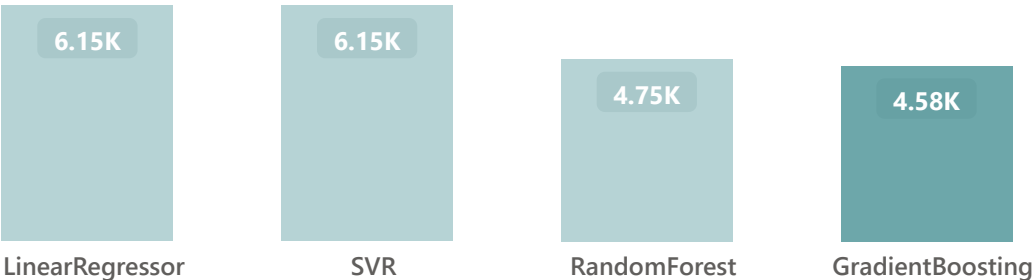
RandomForest

SVR

Training Time



Train_RMSE by Model



R2 Training Set



Test Set R2

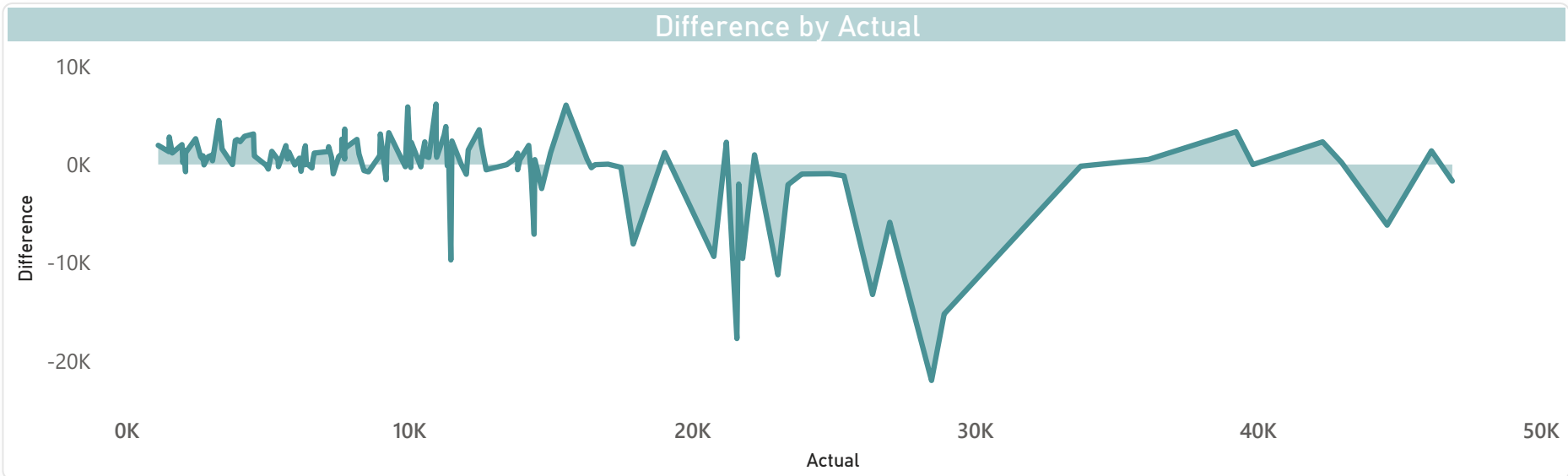
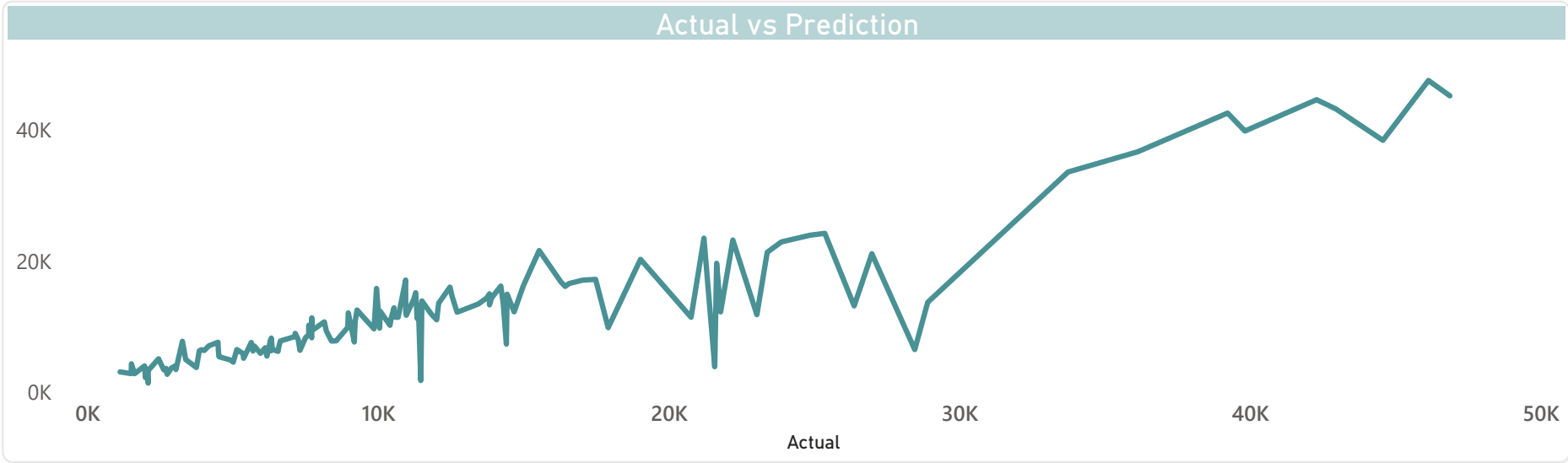
84%

Test Set RMSE

4056.46

Model	Train_time	Train_R2	Train_RMSE	Test_RMSE	Test_R2
GradientBoosting	0.36	0.87	4,575.58	4,056.46	0.84
LinearRegressor	0.01	0.76	6,152.20		
RandomForest	1.22	0.86	4,750.23		
SVR	0.07	0.76	6,152.20		

Actual vs Prediction



Actual	Predicted	Difference
10,959.69	17,106.12	6,146.43
15,555.19	21,599.06	6,043.87
9,957.72	15,820.48	5,862.76
3,279.87	7,758.53	4,478.66
11,305.93	15,166.06	3,860.13
7,731.43	11,336.87	3,605.44
12,485.80	16,026.08	3,540.28
39,241.44	42,576.70	3,335.26
9,288.03	12,527.98	3,239.95
4,504.66	7,612.09	3,107.43
8,988.16	12,092.72	3,104.56
11,244.38	14,222.00	2,977.62
4,189.11	7,060.43	2,871.32
1,526.31	4,322.47	2,796.16
2,459.72	5,086.38	2,626.66
7,626.99	10,203.57	2,576.58
8,162.72	10,717.28	2,554.56
3,925.76	6,467.83	2,542.07
3,861.21	6,296.90	2,435.69
11,520.10	12,012.40	2,202.20