



Los Hexágonos

calorIAS

-Carlos G y Santiago



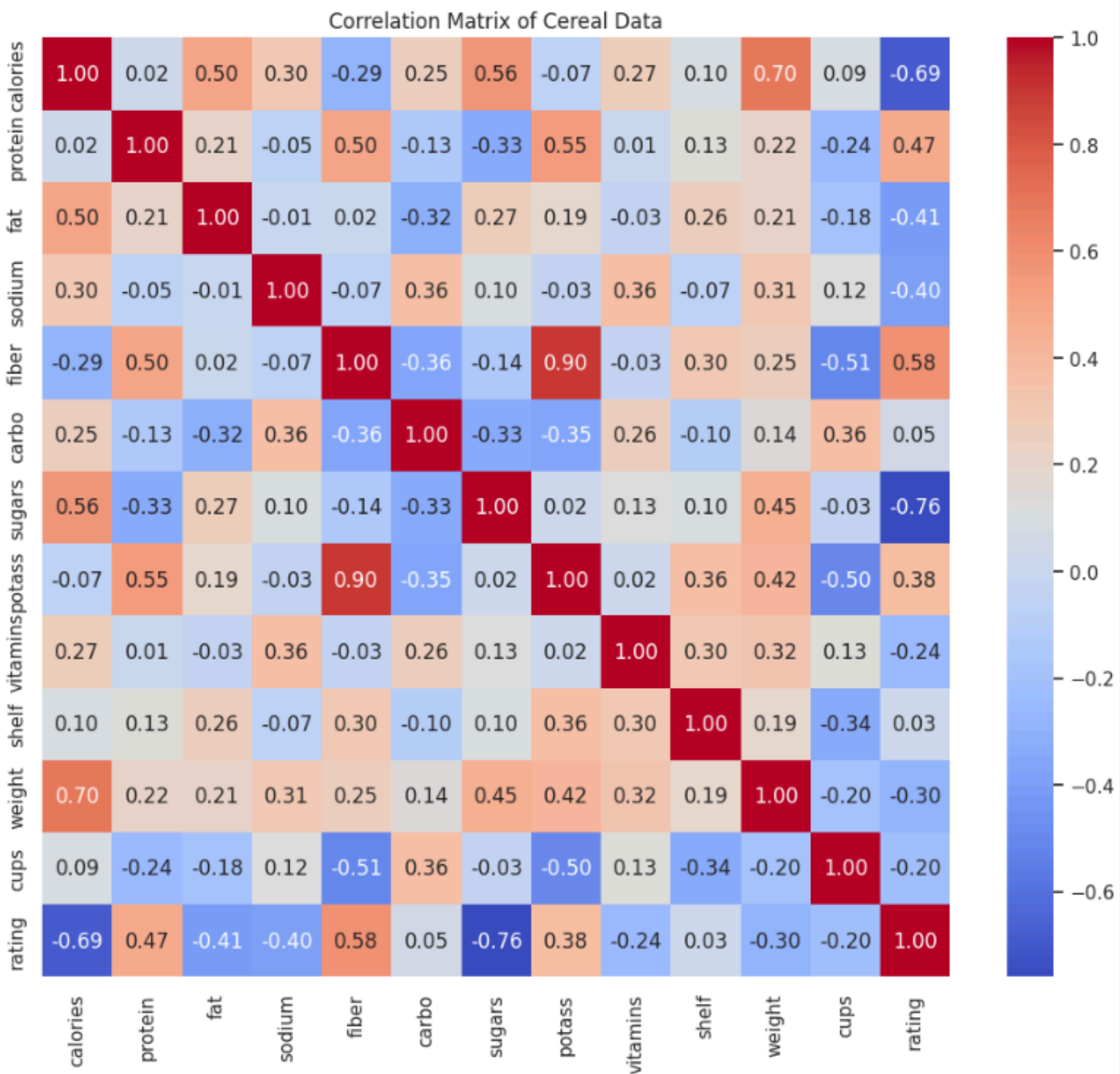


Informacion del dataset

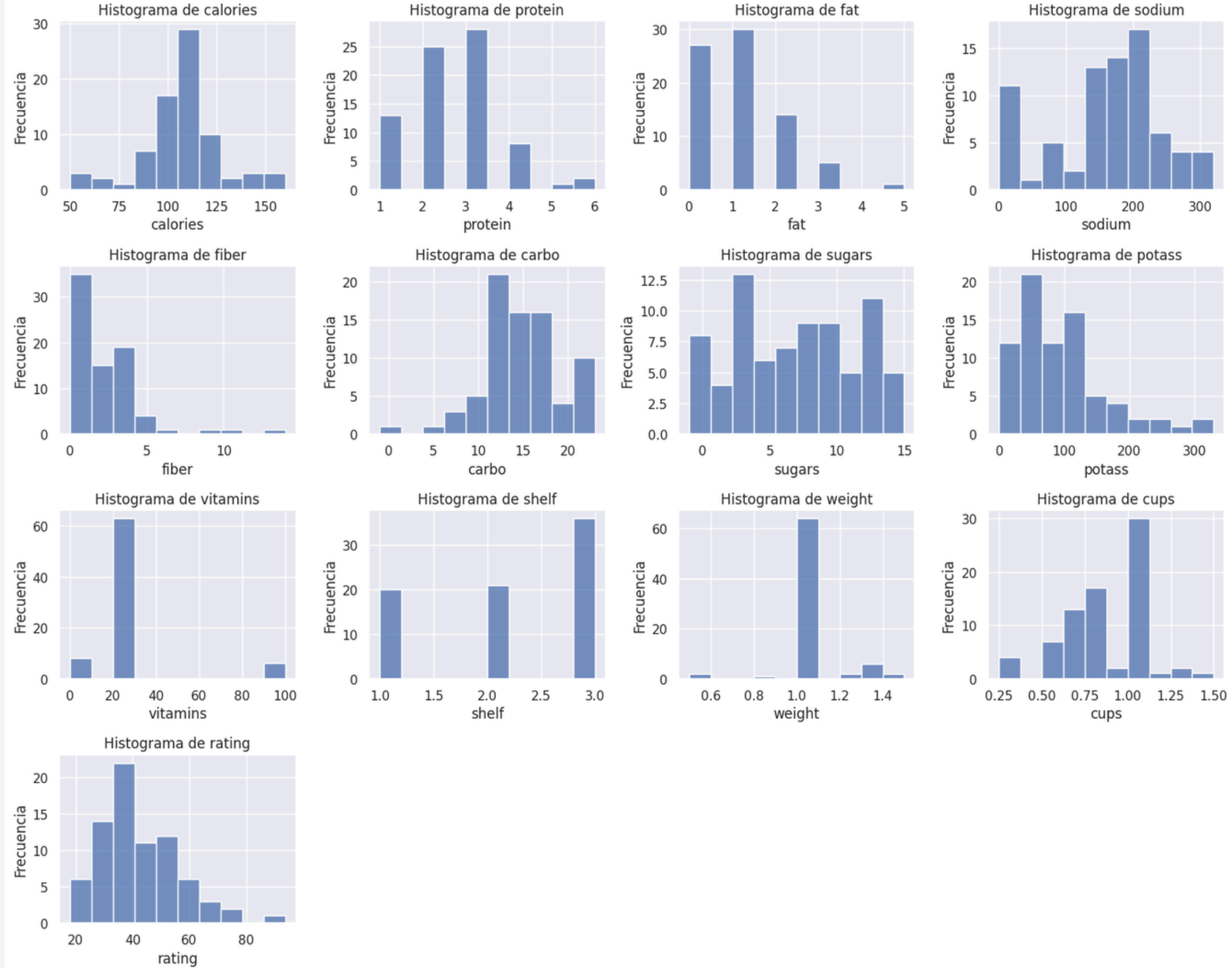


	name	mfr	type	calories	protein	fat	sodium	fiber	carbo	sugars	potass	vitamins	shelf	weight	cups	rating
0	100% Bran	N	C	70	4	1	130	10.0	5.0	6	280	25	3	1.0	0.33	68.402973
1	100% Natural Bran	Q	C	120	3	5	15	2.0	8.0	8	135	0	3	1.0	1.00	33.983679
2	All-Bran	K	C	70	4	1	260	9.0	7.0	5	320	25	3	1.0	0.33	59.425505
3	All-Bran with Extra Fiber	K	C	50	4	0	140	14.0	8.0	0	330	25	3	1.0	0.50	93.704912
4	Almond Delight	R	C	110	2	2	200	1.0	14.0	8	-1	25	3	1.0	0.75	34.384843

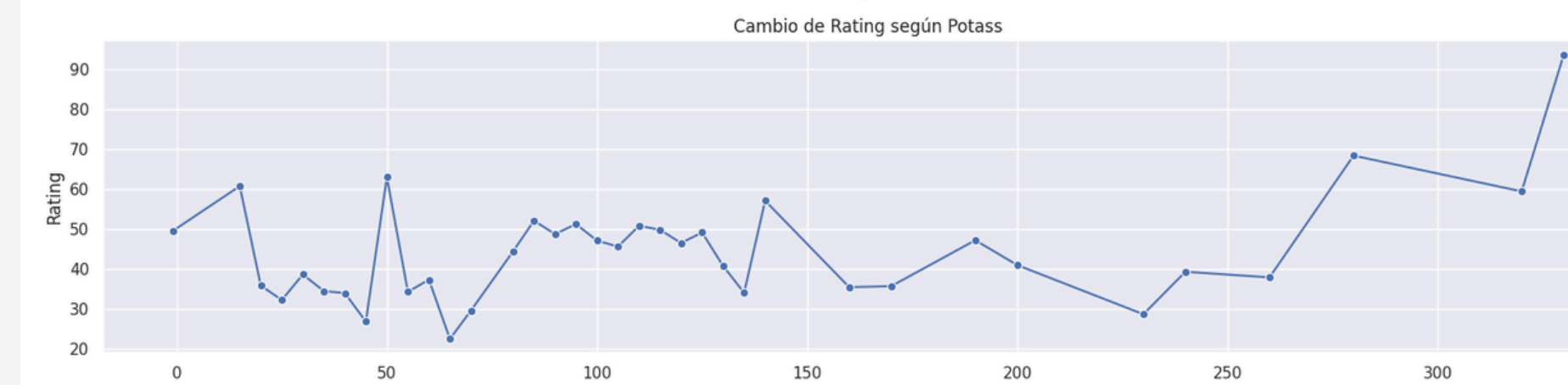
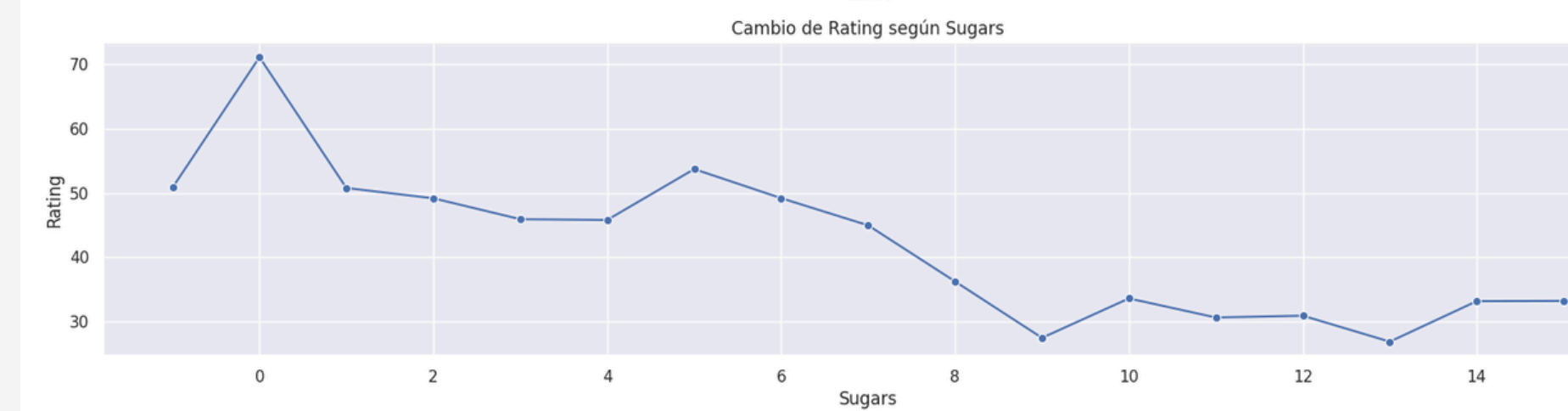
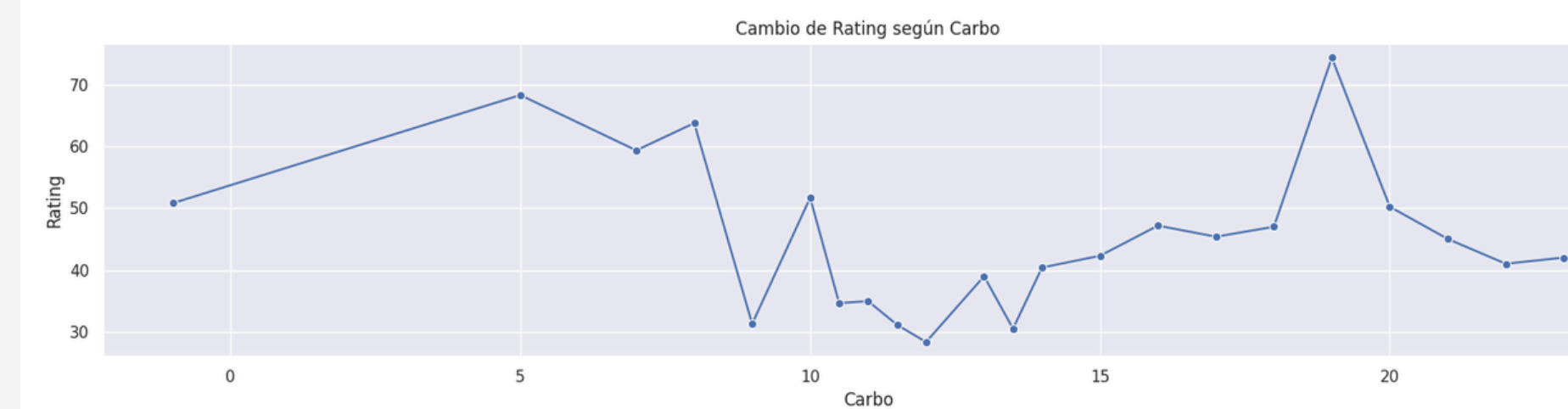
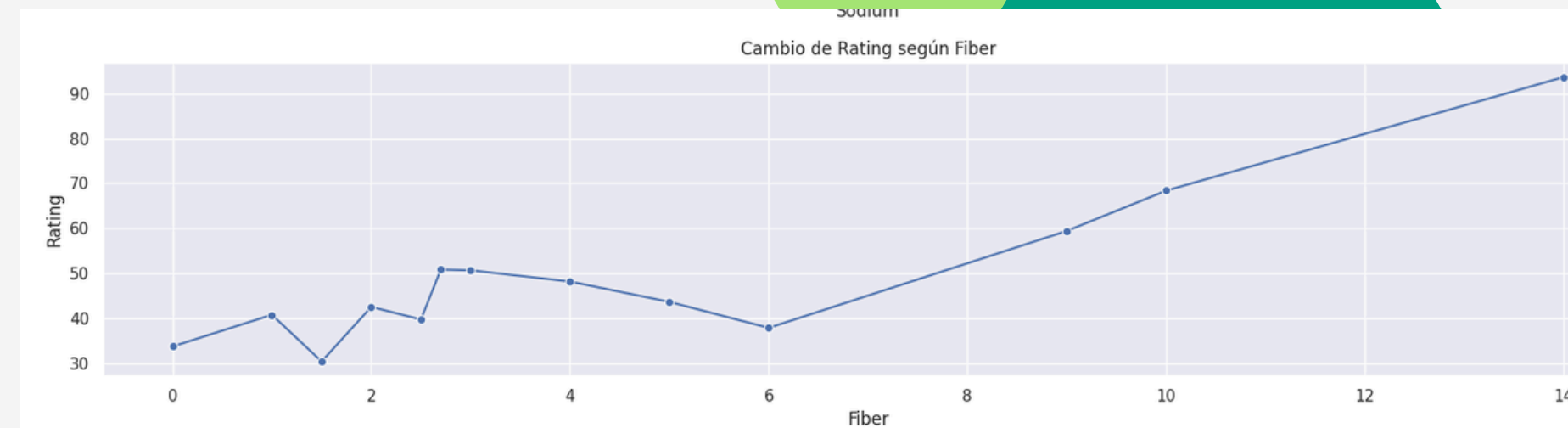
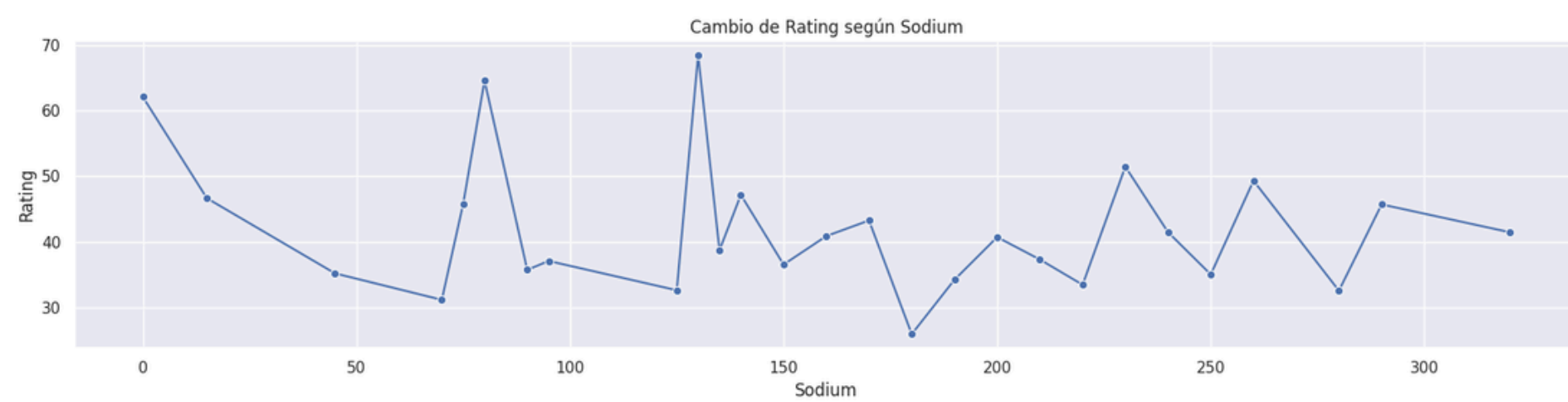
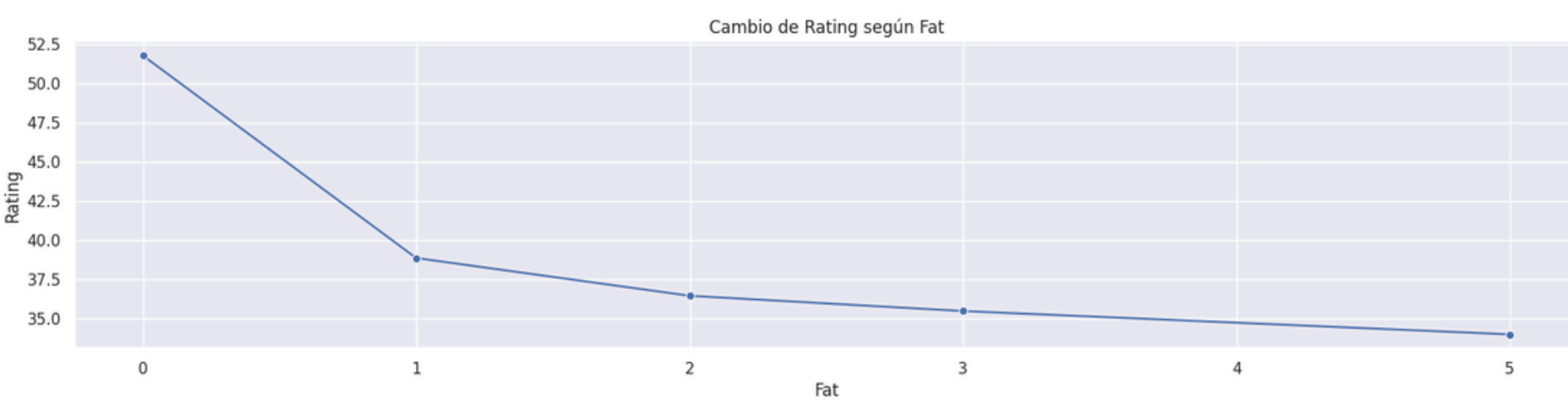
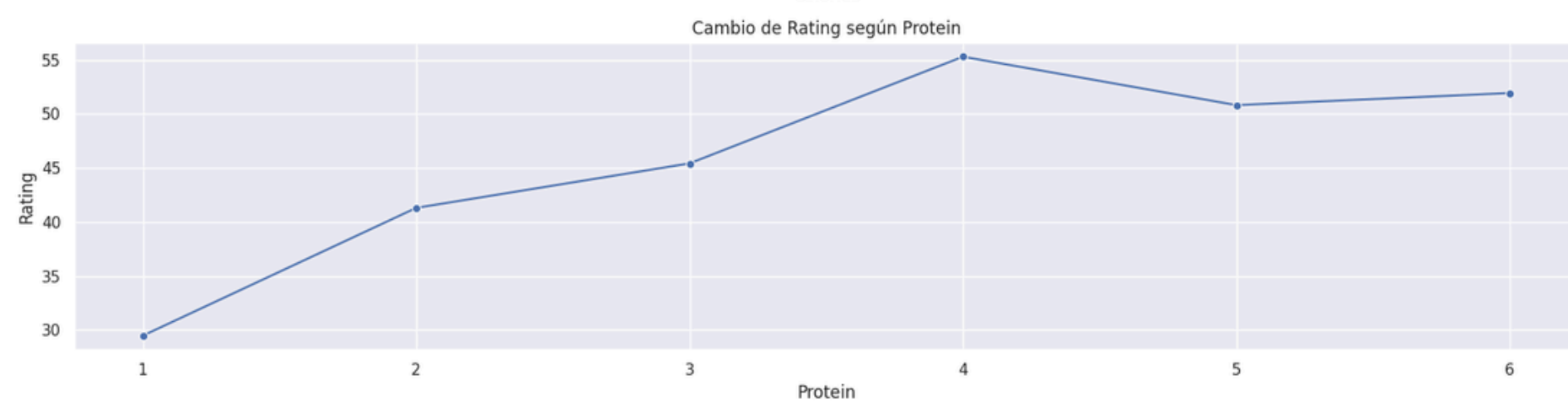
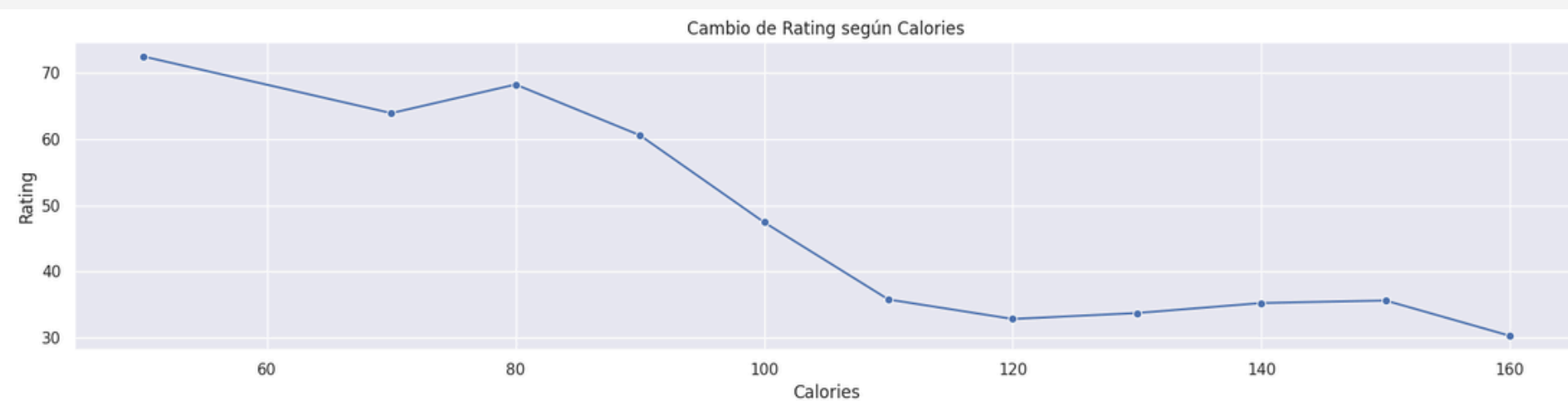
Algunas graficas



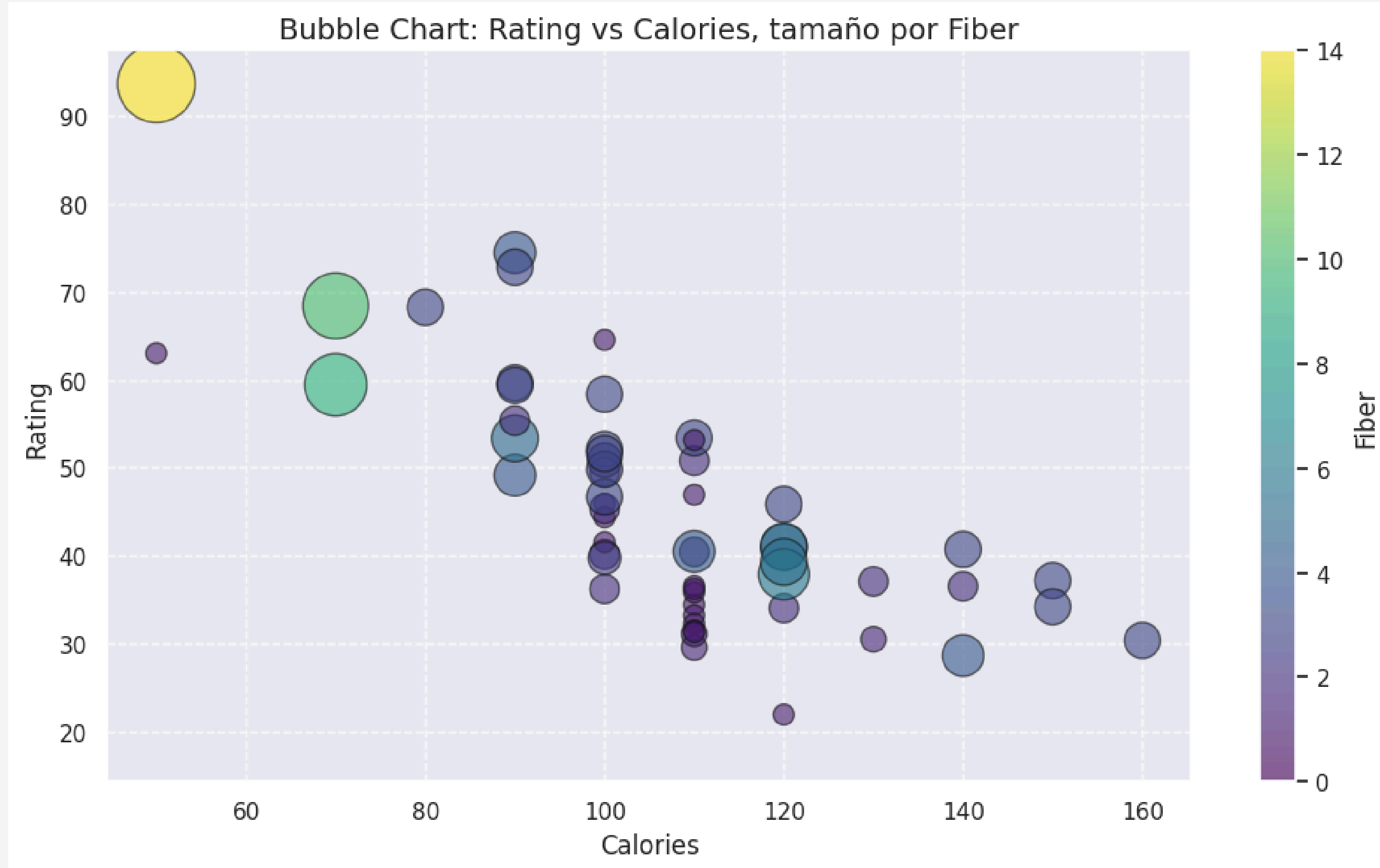
Algunas graficas



Algunas graficas

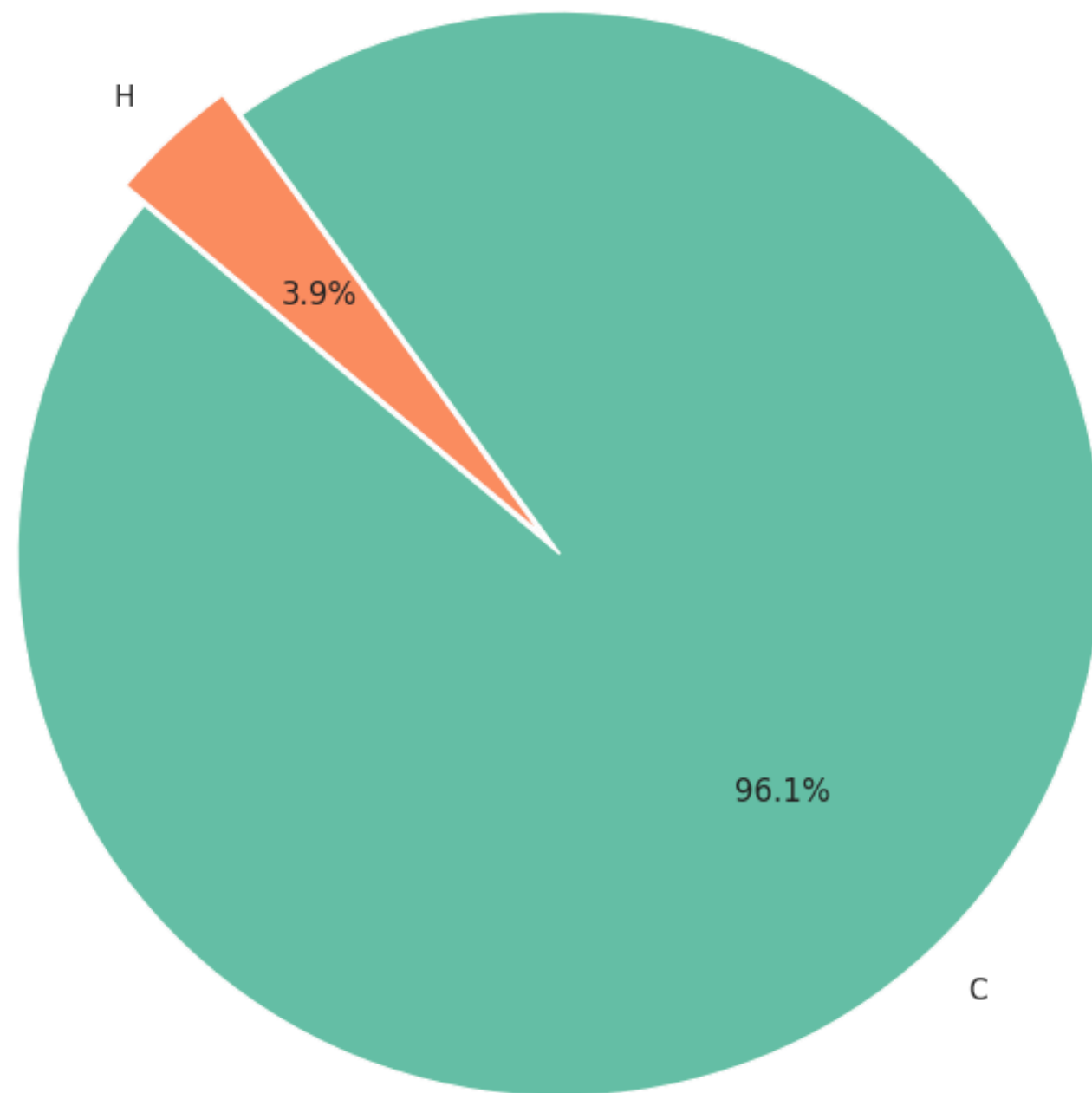


Algunas graficas



Algunas graficas

Distribución de Type (Caliente vs Frío)



Analisis de regresion



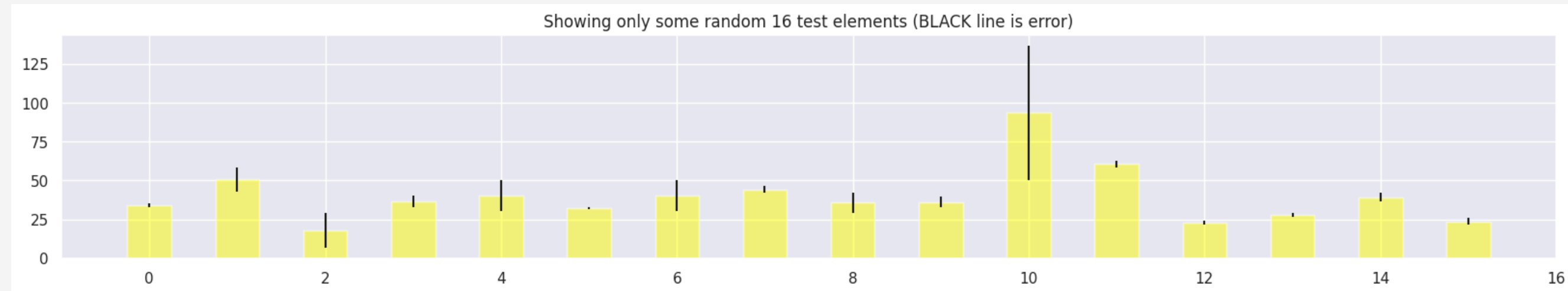
Decision Tree Regressor (parametros por defecto)

```
MAE: 7.235980687499999
y_test (Valores reales): [93.704912 40.448772 22.736446 34.139765 18.042851 60.756112 44.330856
28.025765 32.207582 40.400208 36.176196 50.828392 35.782791 23.804043
36.471512 39.241114]
y_pred (Predicciones): [59.425505 49.511874 22.396513 26.734515 28.742414 63.005645 46.895644
27.753301 33.174094 49.511874 29.509541 68.235885 31.435973 19.823573
30.450843 38.839746]
```

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Decision Tree Regressor

MAE: 6.8869099527529745



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Random Forest Regressor (parametros por defecto)

```
MAE: 5.250275454375001  
y_test (Valores reales): [93.704912 40.448772 22.736446 34.139765 18.042851 60.756112 44.330856  
28.025765 32.207582 40.400208 36.176196 50.828392 35.782791 23.804043  
36.471512 39.241114]  
y_pred (Predicciones): [62.87685558 46.42453595 24.01069453 33.71166904 26.19295936 63.45848999  
46.527629 27.65967861 31.52547723 44.8110376 35.06815532 63.3055216  
28.22426781 25.77384991 33.71807605 40.36413997]
```

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Random Forest Regressor

MAE: 54.2454255418997

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SVR (parametros por defecto)

```
➡ MAE: 10.983945825260854  
y_test (Valores reales): [93.704912 40.448772 22.736446 34.139765 18.042851 60.756112 44.330856  
28.025765 32.207582 40.400208 36.176196 50.828392 35.782791 23.804043  
36.471512 39.241114]  
y_pred (Predicciones): [43.61911059 41.85515562 39.93562133 41.11378249 39.54463692 45.69792868  
40.26437372 40.6293442 40.93177355 41.26730979 41.58859353 46.24305809  
42.00477234 40.40481847 40.03889294 40.10967611]
```

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SVR



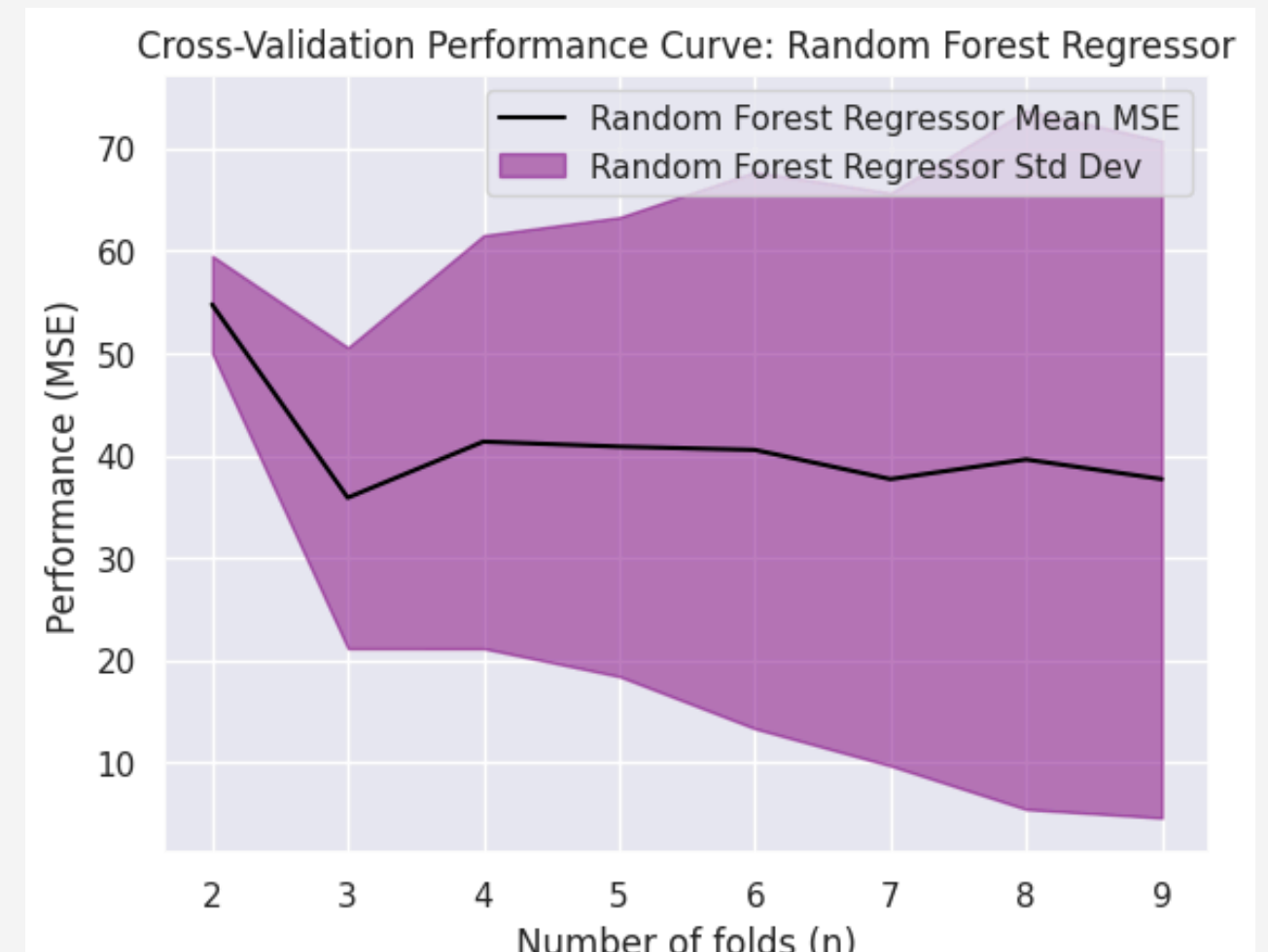
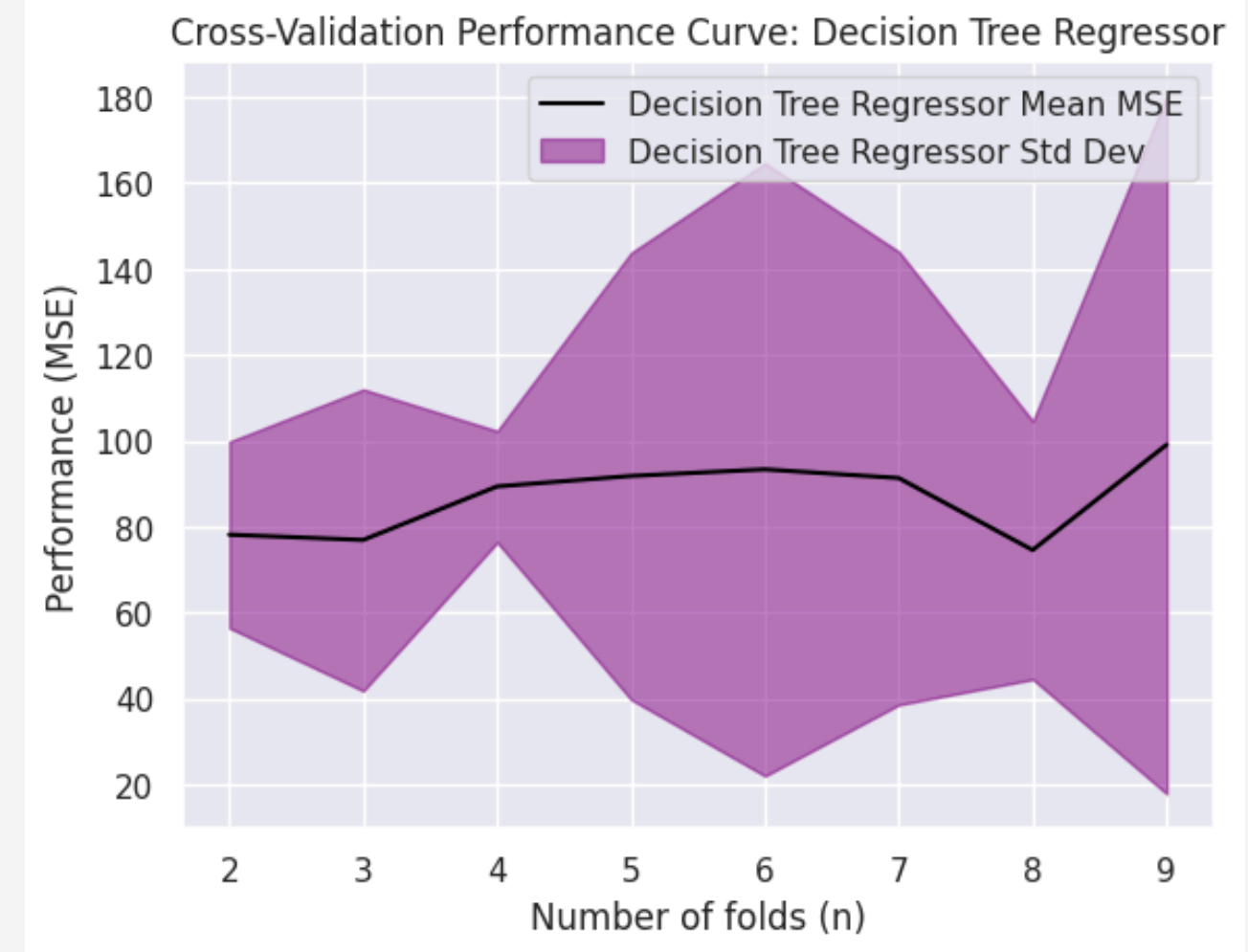
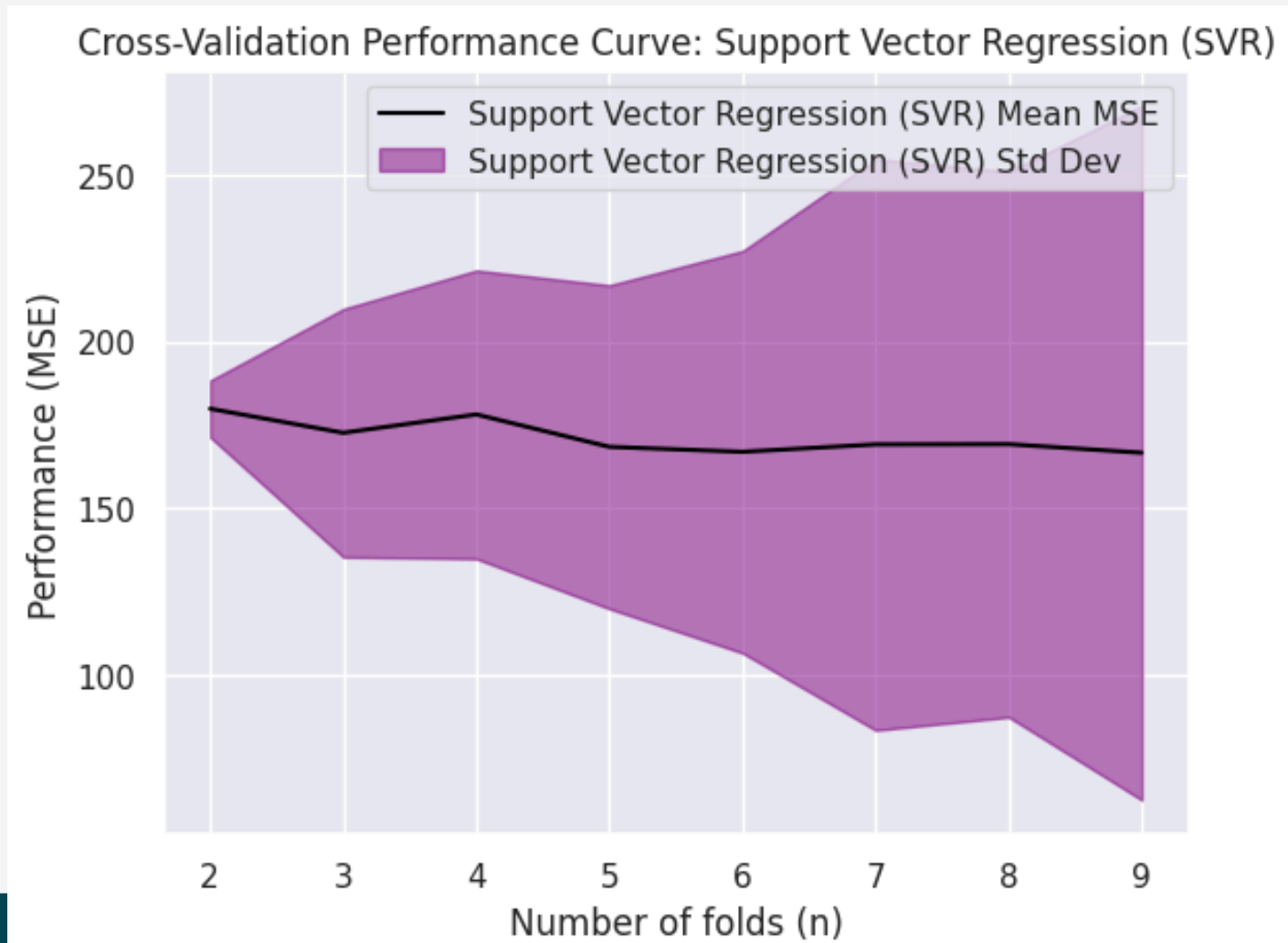
MAE: 0.09240378461863763 0.12702557939844744



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VALIDACION CRUZADA





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Perceptron



3 capas ocultas

```
Epoch 1/10  
2/2 ————— 2s 15ms/step - loss: 26.7807 - mean_absolute_error: 26.7807  
Epoch 2/10  
2/2 ————— 0s 9ms/step - loss: 21.9280 - mean_absolute_error: 21.9280  
Epoch 3/10  
2/2 ————— 0s 13ms/step - loss: 18.5352 - mean_absolute_error: 18.5352  
Epoch 4/10  
2/2 ————— 0s 12ms/step - loss: 15.5922 - mean_absolute_error: 15.5922  
Epoch 5/10  
2/2 ————— 0s 13ms/step - loss: 14.1648 - mean_absolute_error: 14.1648  
Epoch 6/10  
2/2 ————— 0s 11ms/step - loss: 13.7592 - mean_absolute_error: 13.7592  
Epoch 7/10  
2/2 ————— 0s 14ms/step - loss: 13.3285 - mean_absolute_error: 13.3285  
Epoch 8/10  
2/2 ————— 0s 18ms/step - loss: 13.4890 - mean_absolute_error: 13.4890  
Epoch 9/10  
2/2 ————— 0s 12ms/step - loss: 13.4893 - mean_absolute_error: 13.4893  
Epoch 10/10  
2/2 ————— 0s 11ms/step - loss: 12.7127 - mean_absolute_error: 12.7127  
1/1 ————— 0s 59ms/step  
MAE con 3 capas ocultas: 12.9879
```

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6 capas ocultas

```
2/2 ————— 2s 9ms/step - loss: 35.6606 - mean_absolute_error: 35.6606
Epoch 2/10
2/2 ————— 0s 8ms/step - loss: 33.7086 - mean_absolute_error: 33.7086
Epoch 3/10
2/2 ————— 0s 9ms/step - loss: 31.9059 - mean_absolute_error: 31.9059
Epoch 4/10
2/2 ————— 0s 8ms/step - loss: 30.7927 - mean_absolute_error: 30.7927
Epoch 5/10
2/2 ————— 0s 10ms/step - loss: 28.4927 - mean_absolute_error: 28.4927
Epoch 6/10
2/2 ————— 0s 9ms/step - loss: 25.5460 - mean_absolute_error: 25.5460
Epoch 7/10
2/2 ————— 0s 8ms/step - loss: 22.3847 - mean_absolute_error: 22.3847
Epoch 8/10
2/2 ————— 0s 8ms/step - loss: 17.7418 - mean_absolute_error: 17.7418
Epoch 9/10
2/2 ————— 0s 9ms/step - loss: 14.0896 - mean_absolute_error: 14.0896
Epoch 10/10
2/2 ————— 0s 9ms/step - loss: 14.8048 - mean_absolute_error: 14.8048
1/1 ————— 0s 82ms/step
MAE con 6 capas ocultas: 15.4175
```

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10 capas ocultas

```
2/2 ————— 3s 10ms/step - loss: 42.2975 - mean_absolute_error: 42.2975
Epoch 2/10
2/2 ————— 0s 9ms/step - loss: 43.1670 - mean_absolute_error: 43.1670
Epoch 3/10
2/2 ————— 0s 9ms/step - loss: 43.5558 - mean_absolute_error: 43.5558
Epoch 4/10
2/2 ————— 0s 9ms/step - loss: 44.2106 - mean_absolute_error: 44.2106
Epoch 5/10
2/2 ————— 0s 9ms/step - loss: 44.6442 - mean_absolute_error: 44.6442
Epoch 6/10
2/2 ————— 0s 9ms/step - loss: 43.1700 - mean_absolute_error: 43.1700
Epoch 7/10
2/2 ————— 0s 9ms/step - loss: 43.8273 - mean_absolute_error: 43.8273
Epoch 8/10
2/2 ————— 0s 9ms/step - loss: 43.3724 - mean_absolute_error: 43.3724
Epoch 9/10
2/2 ————— 0s 9ms/step - loss: 42.8904 - mean_absolute_error: 42.8904
Epoch 10/10
2/2 ————— 0s 13ms/step - loss: 42.9234 - mean_absolute_error: 42.9234
1/1 ————— 0s 112ms/step
MAE con 10 capas ocultas: 39.7988
```

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GRACIAS!

