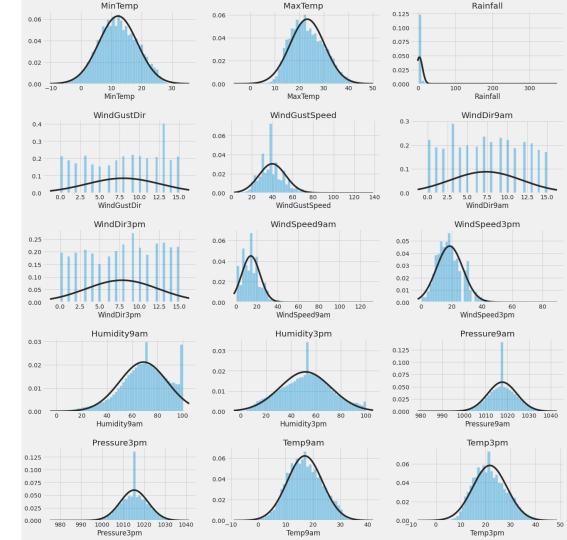
# RAIN PREDICTION IN AUSTRALIA

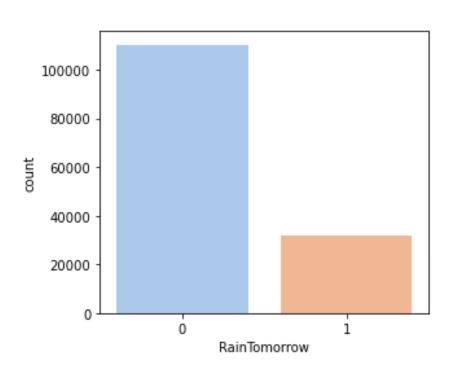


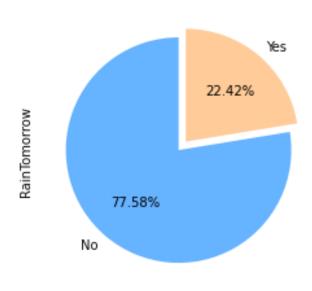
Hernández Garrido, Víctor 1597028 Aprenentage Computacional

# Base de dades



## Atribut Objectiu





MinTemp -	1.00	0.74	0.10	0.47	0.07	0.18	0.18	0.18	-0.23	0.01	-0.45	-0.46	0.08	0.02	0.90	0.71	0.06	0.08
MaxTemp -	0.74	1.00	-0.07				0.01	0.05	-0.50	-0.51	-0.33	-0.43	-0.29	-0.28	0.89	0.98	-0.23	-0.16
Rainfall -	0.10	-0.07	1.00	-0.06	-0.23			0.06			-0.17	-0.13				-0.08		0.24
Evaporation -			-0.06	1.00					-0.50	-0.39	-0.27	-0.29	-0.18	-0.18			-0.19	-0.12
Sunshine -			-0.23		1.00	-0.03		0.05	-0.49	-0.63		-0.02	-0.68	-0.70			-0.33	-0.45
WindGustSpeed -	0.18				-0.03	1.00		0.69	-0.22	-0.03	-0.46	-0.41						0.23
WindSpeed9am -	0.18						1.00		-0.27	-0.03	-0.23	-0.18				0.00		0.09
WindSpeed3pm -			0.06			0.69	0.52	1.00	-0.15	0.02	-0.30	-0.26	0.05				0.08	0.09
Humidity9am -	-0.23	-0.50		-0.50	-0.49	-0.22	-0.27	-0.15	1.00	0.67					-0.47	-0.50		0.26
Humidity3pm -		-0.51		-0.39	-0.63		-0.03		0.67	1.00	-0.03	0.05	0.52	0.52	-0.22	-0.56	0.38	0.45
Pressure9am -	-0.45	-0.33	-0.17	-0.27		-0.46	-0.23	-0.30	0.14	-0.03	1.00	0.96	-0.13	-0.15	-0.42	-0.29	-0.19	-0.25
Pressure3pm -	-0.46	-0.43	-0.13	-0.29	-0.02	-0.41	-0.18	-0.26		0.05	0.96	1.00	-0.06	-0.08	-0.47	-0.39	-0.11	-0.23
Cloud9am -		-0.29		-0.18	-0.68						-0.13	-0.06	1.00	0.60	-0.14	-0.30		0.32
Cloud3pm -	0.02	-0.28		-0.18	-0.70				0.36	0.52	-0.15	-0.08	0.60	1.00	-0.13	-0.32		0.38
Temp9am -	0.90	0.89	0.01					0.16	-0.47	-0.22	-0.42	-0.47	-0.14	-0.13	1.00	0.86	-0.10	-0.03
Temp3pm -	0.71	0.98	-0.08	0.57	0.49		0.00		-0.50	-0.56	-0.29	-0.39	-0.30	-0.32	0.86	1.00	-0.24	-0.19
RainToday -		-0.23		-0.19	-0.33						-0.19	-0.11			-0.10	-0.24	1.00	0.31
RainTomorrow -	0.08	-0.16	0.24	-0.12	-0.45	0.23	0.09	0.09	0.26	0.45	-0.25	-0.23	0.32	0.38	-0.03	-0.19	0.31	1.00
	MinTemp -	MaxTemp -	Rainfall -	vaporation -	Sunshine -	GustSpeed -	ISpeed9am -	Speed3pm -	midity9am -	midity3pm -	essure9am -	essure3pm -	Cloud9am -	Cloud3pm -	Temp9am -	Temp3pm -	RainToday -	nTomorrow -

- 0.8

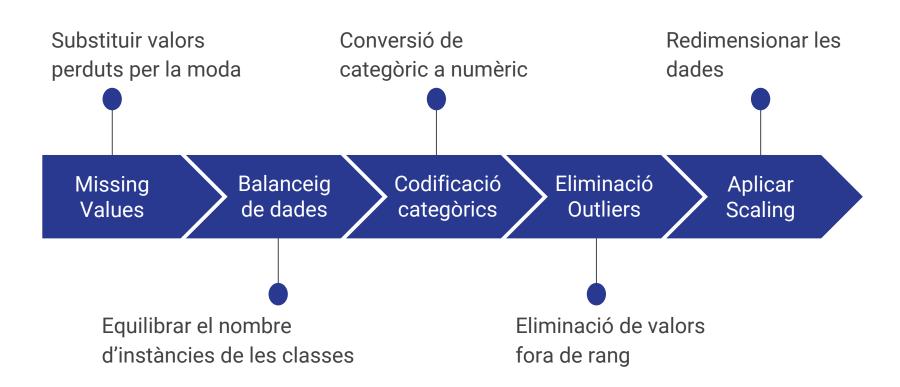
- 0.6

- 0.4

- 0.2

## Matriu de confusió

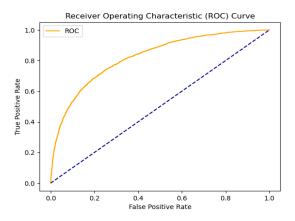
## Preprocessament de les dades



## Selecció de models

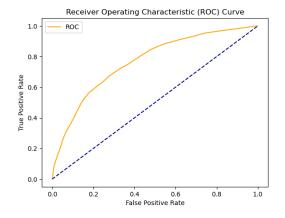
### **Logistic Regression**

	precision	recall	f1-score	support
0.0 1.0	0.74657 0.74374	0.78987 0.69461	0.76761 0.71833	10327 9067
accuracy macro avg weighted avg	0.74515 0.74525	0.74224 0.74533	0.74533 0.74297 0.74457	19394 19394 19394



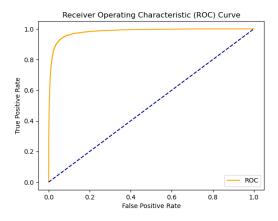
#### **Decision Tree**

	precision	recall	f1-score	support
0.0 1.0	0.69726 0.70130	0.76808 0.62016	0.73096 0.65824	10327 9067
accuracy macro avg weighted avg	0.69928 0.69915	0.69412 0.69893	0.69893 0.69460 0.69696	19394 19394 19394



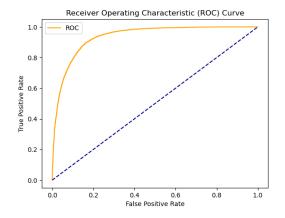
#### Random Forest

	precision	recall	f1-score	support
0.0 1.0	0.95567 0.91319	0.92060 0.95136	0.93781 0.93189	10327 9067
accuracy macro avg weighted avg	0.93443 0.93581	0.93598 0.93498	0.93498 0.93485 0.93504	19394 19394 19394



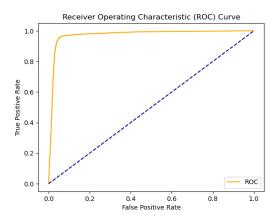
### Light GBM

	precision	recall	f1-score	support
0.0 1.0	0.88854 0.83849	0.85146 0.87835	0.86960 0.85796	10327 9067
accuracy macro avg weighted avg	0.86352 0.86514	0.86490 0.86403	0.86403 0.86378 0.86416	19394 19394 19394



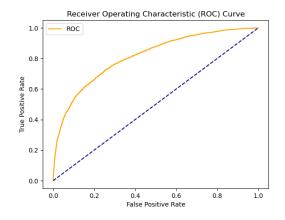
#### **XG** Boost

	precision	recall	f1-score	support
0.0 1.0	0.97335 0.89012	0.89465 0.97210	0.93234 0.92931	10327 9067
accuracy macro avg weighted avg	0.93173 0.93444	0.93337 0.93085	0.93085 0.93082 0.93092	19394 19394 19394



#### **Neural Network**

	precision	recall	f1-score	support
0.0 1.0	0.75712 0.70892	0.73652 0.73089	0.74667 0.71974	10327 9067
accuracy macro avg weighted avg	0.73302 0.73459	0.73370 0.73389	0.73389 0.73321 0.73408	19394 19394 19394



## Conclusions

