

Figure 1. The confusion matrix on the test set for Logistic Regression.

Ν	lo Drought	53330	11654	6007	2254	856	355	- 50000
	D0	8183	2780	1507	662	276	141	- 40000
Actual	D1 -	3754	1432	1006	491	243	88	- 30000
Act	D2	1976	786	625	420	230	86	-20000
	D3-	902	449	314	287	204	83	- 10000
	D4 -	448	219	138	128	76	40	
	N	lo Drough	nt D0	D1 Predi	D2 icted	D <sub>3</sub>	D4	

Figure 2. The confusion matrix on the test set for k Nearest Neighbor.

N	o Drought	42443	3895	1469	3221	2862	20566		40000
	D0 -	4243	1806	526	953	1230	4791	ı	- 35000 - 30000
lal	D1	1436	989	321	860	740	2668		-25000
Actual	D2	425	483	147	681	633	1754		- 20000 - 15000
	D3	154	217	57	567	333	911		-10000
	D4 -	45	128	10	313	179	374		- 5000
	N	lo Drough	t D0	D1 Predi	D2 icted	D3	D4		

Figure 3. The confusion matrix on the test set for Naivers Bayes.

	No Drought	73462	78	856	60	0	0	- 70000
	D0	12600	96	791	62	0	0	- 60000
	D1	E040	117	001	EO	0	0	-50000
Actual	D1	5848	117	991	58	0	0	-40000
Ř	D2-	2681	108	1260	74	0	0	- 30000
	D3	1147	57	999	36	0	0	-20000
	D4 -	456	66	489	38	0	0	-10000
	N	lo Drough	t D0	D1 Predi	D2 cted	D3	D4	- 0

Figure 4. The confusion matrix on the test set for SVM (Linear).

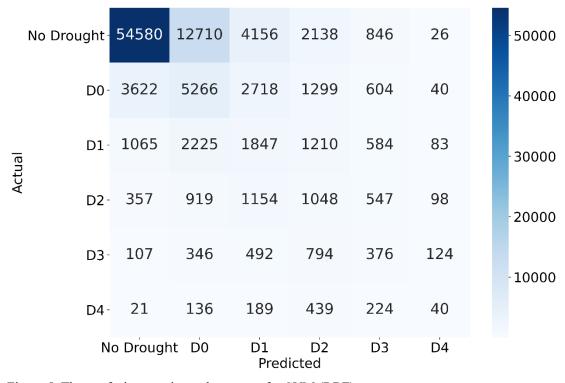


Figure 5. The confusion matrix on the test set for SVM (RBF).

No D	rought -	70541	1806	775	518	571	245	70000
	D0 -	10251	1730	673	413	336	146	50000
ler	D1 -	4179	1251	610	402	389	183	40000
Actual	D2 -	1569	774	598	448	489	245	30000
	D3-	576	392	312	431	356	172	20000
	D4 -	135	197	134	250	231	102	10000
	N	o Drough	t D0	D1 Predi	D2 icted	D3	D4	

Figure 6. The confusion matrix on the test set for Linear Discriminant Analysis.

No Dro	ought-	74372	82	1	1	0	0	70000
	D0-	13518	21	8	2	0	0	60000
=	D1 -	6979	27	7	1	0	0	-50000
Actual	D2 -	4108	8	7	0	0	0	- 30000
	D3-	2228	9	2	0	0	0	-20000
	D4 -	1036	5	8	0	0	0	- 10000
		lo Drough		D 1 Predi	D2	D <sub>3</sub>	Ď4	- 0

Figure 7. The confusion matrix on the test set for Quadratic Discriminant Analysis.

No E	rought	72809	1017	338	230	48	14		- 70000
	D0-	12067	1034	235	168	33	12	ı	-60000 -50000
ual	D1 -	5396	1100	258	208	46	6		-40000
Actual	D2 -	2410	1079	328	233	60	13		- 30000
	D3 -	992	779	227	184	42	15		-20000
	D4 -	320	426	155	121	20	7		- 10000
	N	o Drough	t D0	D1 Pred	D2 icted	D3	D4		

Figure 8. The confusion matrix on the test set for Ridge.

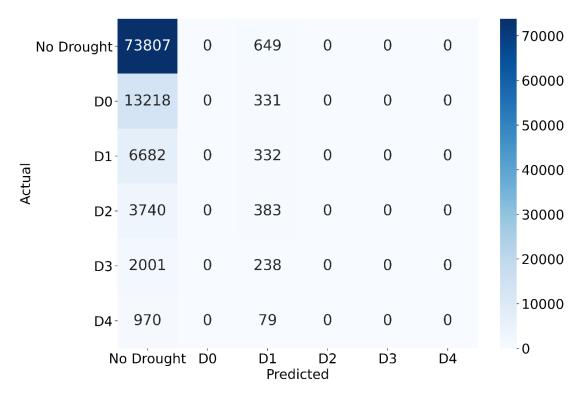


Figure 9. The confusion matrix on the test set for Decision Tree.

No D	rought-	74401	1	15	38	0	1		70000
	D0 -	13506	2	12	27	1	1	١	60000
	D1 -	6926	5	29	54	0	0		- 50000
Actual									40000
∢	D2-	4006	8	29	78	1	1		- 30000
	D3 -	2121	10	38	69	0	1		-20000
	D4 -	1021	0	2	26	0	0		-10000
	N	o Drough	t D0	D1 Predi	D2 icted	D3	D4		- 0

Figure 10. The confusion matrix on the test set for Random Forest.

No Dro	ought-	74448	0	0	7	0	1	- 70000
	D0-	13546	0	0	1	0	2	-60000
_	D1-	7006	0	0	3	0	5	-50000
Actual	D2 -	4114	0	0	4	0	5	-40000 -30000
	D3-	2227	0	1	2	0	9	-20000
		1048	0	0	1	0	0	- 10000
		o Drough		D1	D2 icted	D3	Ď4	-0

Figure 11. The confusion matrix on the test set for Extra Trees.

No Dro	ought-	73825	130	84	196	134	87	70000
	D0-	13141	76	44	128	101	59	60000
								50000
Actual	D1 -	6500	85	87	145	103	94	40000
Act	D2 -	3471	85	102	199	157	109	30000
	D3-	1699	69	66	195	128	82	20000
	D4 -	739	29	30	135	58	58	10000
	N	lo Drough	t D0	D 1 Predi	D2 icted	D3	D4	

Figure 12. The confusion matrix on the test set for AdaBoost.

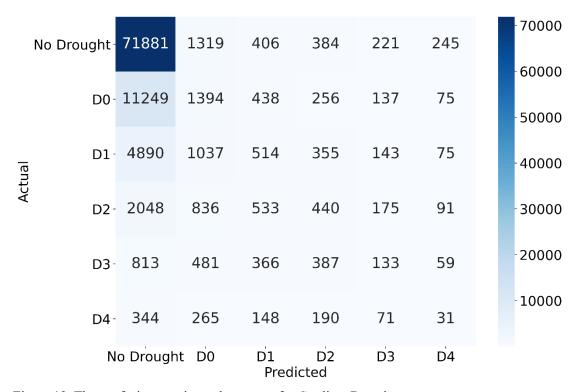


Figure 13. The confusion matrix on the test set for Gradient Boosting.

No I	Drought -	73060	960	273	131	32	0	- 70000
	D0 -	12065	1059	291	101	33	0	-60000
<u>_</u>	D1 -	5506	888	409	170	40	1	- 50000 - 40000
Actual	D2 -	2567	790	442	249	75	0	- 30000
	D3-	1054	527	365	238	55	0	- 20000
	D4 -	437	305	142	139	26	0	-10000
	N	o Drough	t DO	D1 Pred	D2 icted	D3	Ď4	- 0

Figure 14. The confusion matrix on the test set for Extreme Gradient Boosting.

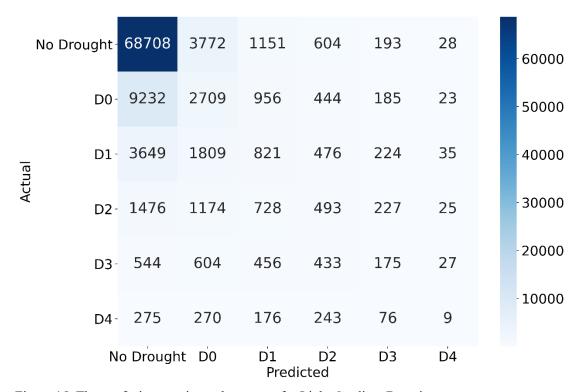


Figure 15. The confusion matrix on the test set for Light Gradient Boosting.

	No Drought	73803	354	74	219	6	0	70000
	D0	12812	436	133	161	4	3	60000
								-50000
Actual	D1	6095	451	194	249	13	12	-40000
Act	D2	3060	454	219	339	39	12	- 30000
	D3	1349	301	200	363	16	10	-20000
	D4 ·	- 563	203	69	207	5	2	- 10000
	N	lo Drough	t D0	D 1 Pred	D2 icted	D <sub>3</sub>	Ď4	- 0

Figure 16. The confusion matrix on the test set for CatBoost.

No	Drought -	67423	4127	1126	1326	454	0	60000
	D0-	8052	3088	1091	983	335	0	50000
lar	D1 -	2938	1717	941	1007	411	0	40000
Actual	D2-	1128	780	665	1048	502	0	30000
	D3-	374	289	274	979	323	0	20000
	D4 -	246	122	76	508	97	0	10000
	N	lo Drough	nt D0	D1 Predi	D2 icted	D3	D4	0

Figure 17. The confusion matrix on the test set for MLP.

No Dro	ught-	71472	2030	400	542	12	0	70000
	D0-	10761	1830	430	501	27	0	-60000
								-50000
Actual	D1 -	4234	1556	494	679	48	3	40000
Aci	D2 -	1732	930	476	890	79	16	-30000
	D3-	682	406	228	822	83	18	-20000
	D4-	290	224	63	437	24	11	10000
	N	o Drough	t D0	D1 Predi	D2 icted	D3	Ď4	- 0

Figure 18. The confusion matrix on the test set for RNN.

No	Drought-	69750	3417	788	480	21	0	- 60000
	D0 -	8916	3188	1019	393	33	0	- 50000
ler	D1 -	3479	1686	1155	603	91	0	- 40000
Actual	D2 -	1604	704	835	788	191	1	- 30000
	D3-	681	288	343	760	166	1	- 20000
	D4 -	237	218	99	442	53	0	- 10000
	N	o Drough	nt D0	D1 Predi	D2 icted	D3	D4	- 0

Figure 19. The confusion matrix on the test set for GRU.

No Dr	ought-	67784	3876	1240	1248	291	17	-60000
	D0 -	7493	3387	1489	1015	133	32	- 50000
nal	D1 -	2983	1429	1153	1195	191	63	-40000
Actual	D2 -	1436	517	675	1091	273	131	- 30000
	D3 -	573	202	344	709	251	160	-20000
	D4 -	331	125	189	280	61	63	- 10000
	N	o Drough	nt DO	D 1 Predi	D2 icted	D3	D4	

Figure 20. The confusion matrix on the test set for LSTM.

	No Drought	66488	5321	1408	935	301	3		-60000
	D0	7843	3671	1351	553	126	5	ı	- 50000
lal	D1	2659	1968	1591	691	103	2		- 40000
Actual	D2	994	1022	1058	852	180	17		- 30000
	D3	- 292	435	557	752	185	18		-20000
	D4	- 258	180	161	382	51	17		- 10000
	Ν	lo Drough	nt D0	D1 Predi	D2 cted	D3	D4		

Figure 21. The confusion matrix on the test set for FCN.

No Dro	ught-	70768	2567	689	383	49	0	70000
		44-44						-60000
	D0-	10533	2019	626	311	60	0	-50000
Actual	D1 -	4212	1541	778	405	78	0	-40000
Act	D2 -	1754	941	717	533	178	0	- 30000
	D3-	660	404	541	504	130	0	-20000
	D4 -	313	174	222	307	33	0	-10000
	N	o Drough	t D0	D1 Predi	D2 icted	D3	D4	-0

Figure 22. The confusion matrix on the test set for ResNet.

No Dro	ught -	71203	2417	524	294	18	0	70000
	D0	10838	1881	529	266	35	0	-60000 -50000
nal	D1 -	4365	1535	704	368	42	0	- 40000
Actual	D2	1782	991	661	577	112	0	- 30000
	D3	622	475	457	599	86	0	-20000
	D4	252	214	144	419	20	0	-10000
	N	lo Drough	t D0	D 1 Pred	D2 icted	D3	Ď4	- 0

Figure 23. The confusion matrix on the test set for ResCNN.

	No Drought	65750	5476	1369	1674	181	6	- 60000
	D0	7017	3872	1459	923	253	25	- 50000
a	D1	2736	1719	1260	958	311	30	- 40000
Actual	D2	1333	735	722	900	352	81	- 30000
	D3	541	340	307	687	253	111	-20000
	D4 -	322	195	70	340	61	61	-10000
	N	lo Drough	nt D0	D1 Pred	D2 icted	D3	D4	

Figure 24. The confusion matrix on the test set for TCN.

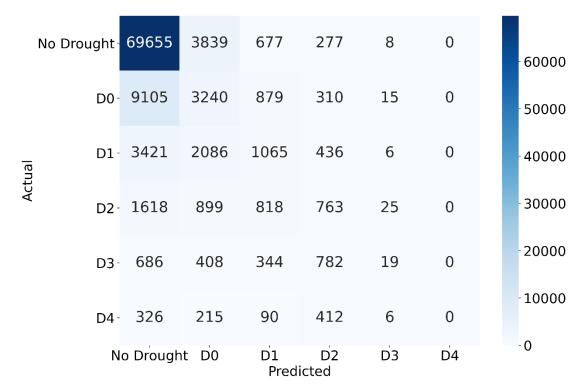


Figure 25. The confusion matrix on the test set for InceptionTime.

No	Drought-	68310	4412	963	591	178	2	-60000
	D0 -	8004	3759	1120	509	137	20	- 50000
Actual	D1 -	3087	1901	1220	589	187	30	- 40000
Act	D2-	1269	1009	780	681	323	61	- 30000
	D3	420	514	371	585	270	79	-20000
	D4 -	225	282	139	260	103	40	-10000
	N	o Drough	nt D0	D 1 Predi	D2 cted	D3	D4	

Figure 26. The confusion matrix on the test set for XceptionTime.

No	Drought-	70597	2548	626	549	133	3	70000
								60000
	D0 -	9717	2623	674	391	142	2	-50000
Actual	D1 -	3879	1638	769	592	133	3	-40000
Act	D2 -	1755	861	701	589	213	4	-30000
	D3-	771	371	380	500	214	3	-20000
	D4 -	359	225	145	252	68	0	-10000
	N	o Drough	t D0	D 1 Predi	D2 icted	D <sub>3</sub>	D4	- 0

Figure 27. The confusion matrix on the test set for OS-CNN.

	No Drought	66733	5330	1551	660	140	42	-60000
	D0-	7664	3819	1385	553	113	15	- 50000
lal	D1 -	3093	1931	1288	511	162	29	-40000
Actual	D2 -	1645	805	750	646	225	52	- 30000
	D3 -	672	449	356	495	238	29	-20000
	D4 -	341	246	108	237	100	17	-10000
	N	o Drough	t D0	D 1 Predi	D2 cted	D3	D4	

Figure 28. The confusion matrix on the test set for XCM.

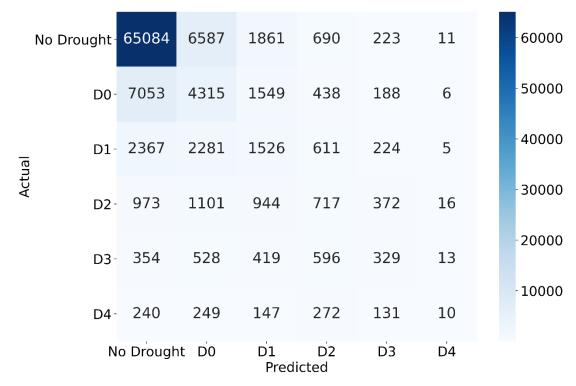


Figure 29. The confusion matrix on the test set for RNN\_FCN.

	No Drought	68599	4083	830	772	172	0	-60000
	D0	8906	3135	892	479	137	0	- 50000
nal	D1	3308	1843	1018	692	153	0	- 40000
Actual	D2	1512	872	674	771	294	0	- 30000
	D3	- 583	420	300	642	294	0	-20000
	D4 ·	313	221	78	310	127	0	- 10000
	N	lo Drough	nt DO	D 1 Predi	D2 cted	D3	D4	- 0

Figure 30. The confusion matrix on the test set for GRU\_FCN.

1	No Drought	69030	3887	844	641	54	0		- 60000
	D0	9057	3115	877	432	68	0	ı	- 50000
ual	D1	3391	1882	1007	655	79	0		- 40000
Actual	D2	1530	900	692	812	189	0		- 30000
	D3	592	395	328	731	193	0		-20000
	D4	312	204	124	341	68	0		-10000
	N	lo Drough	t D0	D1 Predi	D2 cted	D <sub>3</sub>	Ď4		- 0

Figure 31. The confusion matrix on the test set for LSTM\_FCN.

								70000
1	No Drought	70224	2403	1071	605	151	2	-60000
Actual	D0-	9353	2445	1003	629	105	14	- 50000
	D1	3524	1543	1066	676	185	20	-40000
	D2	1443	856	777	762	256	29	-30000
	D3 -	529	390	386	668	215	51	-20000
	D4 -	297	220	149	256	116	11	-10000
	No Drought D0 D1 Pre					D3	D <sub>4</sub>	

Figure 32. The confusion matrix on the test set for TST.