

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy	F1 score:	Loss	Recall
#1	28008	91	44	93	7652	FALSE	97.65926	0.972455	2.340743	0.976593
#2	27977	100	30	149	9585	TRUE	97.62821	0.973909	2.371787	0.976282
#3	29634	71	20	67	3839	FALSE	97.53508	0.973741	2.46492	0.975351
#4	22164	76	51	57	2586	TRUE	97.49783	0.972012	2.502173	0.974978
#5	25455	73	29	76	7405	TRUE	97.48541	0.971149	2.514591	0.974854
#6	18878	66	143	75	3703	FALSE	97.44195	0.969476	2.558053	0.974419
#7	26441	89	17	170	2023	FALSE	97.42332	0.972597	2.576679	0.974233
#8	29922	98	218	62	6011	FALSE	97.37365	0.969217	2.62635	0.973736
#9	15555	98	59	23	6287	FALSE	97.3364	0.969617	2.663604	0.973364
#10	19379	93	129	102	7196	FALSE	97.33019	0.968828	2.669812	0.973302
#11	20062	75	69	83	3408	FALSE	97.29914	0.969248	2.700857	0.972991
#12	29362	46	83	174	4499	FALSE	97.28673	0.968398	2.713275	0.972867
#13	17206	78	125	33	1903	TRUE	97.26189	0.970062	2.73811	0.972619
#14	27772	93	395	14	3193	TRUE	97.26189	0.96985	2.73811	0.972619
#15	28393	100	193	180	3088	TRUE	97.25568	0.967551	2.744319	0.972557
#16	22656	88	187	65	828	FALSE	97.24947	0.968842	2.750528	0.972495
#17	29556	77	289	63	1997	TRUE	97.18117	0.968175	2.818825	0.971812
#18	27057	62	293	20	5237	FALSE	97.15634	0.966705	2.843661	0.971563
#19	25076	94	269	121	3367	FALSE	97.13771	0.966742	2.862287	0.971377
#20	29367	92	352	39	1265	TRUE	97.11909	0.967446	2.880914	0.971191
#21	22605	69	396	43	2905	FALSE	97.10667	0.965995	2.893332	0.971067
#22	24490	70	379	30	1312	FALSE	97.08804	0.966091	2.911958	0.97088
#23	27855	50	39	37	165	TRUE	97.08804	0.967057	2.911958	0.97088
#24	26771	61	242	73	1350	TRUE	97.08183	0.966038	2.918167	0.970818
#25	27456	65	206	10	8770	FALSE	97.07562	0.966238	2.924376	0.970756
#26	26900	53	247	28	4570	TRUE	97.03216	0.965559	2.967838	0.970322
#27	23607	36	316	36	2230	TRUE	97.01354	0.96646	2.986465	0.970135
#28	29100	19	21	46	2317	FALSE	97.00112	0.965675	2.998882	0.970011
#29	27670	79	260	169	5114	FALSE	96.9204	0.964353	3.079598	0.969204
#30	18102	52	231	13	2594	FALSE	96.90798	0.966034	3.092015	0.96908
#31	18914	79	264	48	3679	FALSE	96.89557	0.963637	3.104433	0.968956
#32	28724	51	325	132	577	FALSE	96.87694	0.964205	3.12306	0.968769
#33	26319	94	186	41	7214	TRUE	96.86452	0.963922	3.135477	0.968645
#34	18075	70	725	19	1786	FALSE	96.8521	0.963496	3.147895	0.968521

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy	F1 score:	Loss	Recall
#35	21898	65	582	37	1648	FALSE	96.83348	0.963453	3.166522	0.968335
#36	28006	90	567	48	681	FALSE	96.79002	0.964715	3.209984	0.9679
#37	23586	59	658	60	3060	TRUE	96.43611	0.959348	3.563889	0.964361
#38	27579	75	375	157	4345	FALSE	96.4299	0.959748	3.570098	0.964299
#39	28194	67	1108	53	1363	FALSE	96.29331	0.958074	3.706693	0.962933
#40	28820	61	692	116	2800	FALSE	96.04495	0.955882	3.955048	0.96045
#41	29282	82	467	186	2729	FALSE	95.77797	0.953316	4.222029	0.95778
#42	21872	81	547	250	4383	FALSE	94.87148	0.943643	5.128524	0.948715
#43	28857	53	695	229	2305	TRUE	94.69763	0.943166	5.302372	0.946976
#44	9791	61	1546	53	6167	FALSE	92.91568	0.923898	7.084316	0.929157
#45	3490	39	1370	42	8140	TRUE	92.69837	0.922614	7.301627	0.926984
#46	26625	14	670	36	9135	TRUE	92.55557	0.921099	7.444431	0.925556
#47	8074	30	1472	55	61	TRUE	92.0899	0.920066	7.910096	0.920899
#48	24572	49	5736	38	5718	TRUE	89.43872	0.887709	10.56128	0.894387
#49	13422	72	1505	190	3581	TRUE	88.66882	0.88378	11.33118	0.886688
#50	12183	64	1315	218	5097	TRUE	86.72544	0.86485	13.27456	0.867254
#51	17744	62	8079	47	8550	FALSE	86.6944	0.859332	13.3056	0.866944
#52	4280	86	6569	53	595	FALSE	84.93108	0.849003	15.06892	0.849311
#53	13084	73	8317	35	6850	FALSE	84.04321	0.830509	15.95679	0.840432
#54	12596	38	3746	66	3778	TRUE	80.46691	0.798077	19.53309	0.804669
#55	28374	65	2436	186	8161	TRUE	79.21272	0.792139	20.78728	0.792127
#56	22694	54	5902	99	2511	FALSE	77.44319	0.778826	22.55681	0.774432
#57	3334	74	7011	63	8925	TRUE	76.15174	0.775968	23.84826	0.761517
#58	8172	91	2761	168	6629	TRUE	75.17695	0.77718	24.82305	0.75177
#59	28951	56	6740	93	4071	TRUE	72.43884	0.712204	27.56116	0.724388
#60	22952	23	7362	24	2434	FALSE	71.37713	0.6845	28.62287	0.713771
#61	20066	31	5696	87	6912	TRUE	68.25407	0.658527	31.74593	0.682541
#62	29014	68	7875	114	8415	TRUE	67.65802	0.669478	32.34198	0.67658
#63	9216	89	5316	138	3299	FALSE	66.92537	0.66047	33.07463	0.669254
#64	25882	79	9057	128	1700	TRUE	66.77015	0.662109	33.22985	0.667701
#65	21369	81	8753	115	3216	TRUE	65.26139	0.649192	34.73861	0.652614
#66	25911	54	6337	123	8503	FALSE	64.2183	0.631919	35.7817	0.642183
#67	19622	47	4207	167	9952	FALSE	63.43599	0.636963	36.56401	0.63436
#68	2340	55	7999	57	860	TRUE	62.41152	0.638722	37.58848	0.624115

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy	F1 score:	Loss	Recall
#69	13752	95	4748	193	8067	TRUE	62.27493	0.647102	37.72507	0.622749
#70	21026	48	8388	124	267	FALSE	59.25742	0.598463	40.74258	0.592574
#71	2291	64	9223	67	5310	TRUE	54.54489	0.541548	45.45511	0.545449
#72	11656	95	8203	205	1966	TRUE	50.4222	0.523001	49.5778	0.504222
#73	5846	33	8134	96	7389	FALSE	48.03179	0.5228	51.96821	0.480318
#74	11780	34	6943	157	6590	FALSE	47.87036	0.467053	52.12964	0.478704
#75	5121	68	7198	208	5781	TRUE	40.6184	0.480552	59.3816	0.406184
#76	3390	70	9820	167	4168	TRUE	37.90513	0.388902	62.09487	0.379051
#77	2252	34	7041	239	7062	TRUE	36.65094	0.371645	63.34906	0.366509
#78	2098	11	3904	77	1119	TRUE	35.57059	0.398953	64.42941	0.355706
#79	1768	12	5956	221	7805	FALSE	13.20005	0.187566	86.79995	0.132

Table 1: Results from the sweep on CICIDS-2017

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy (%)	Loss	F1 score:	Recall
#1	49883	65	20	25	12289	TRUE	99.87122	0.128783	0.999033	0.998712
#2	19005	67	24	9	43811	TRUE	99.80683	0.193175	0.998066	0.998068
#3	31078	51	5	39	13756	TRUE	99.74243	0.257566	0.998066	0.997424
#4	45747	74	88	14	33817	TRUE	99.74243	0.257566	0.997743	0.997424
#5	46718	67	22	33	22668	TRUE	99.74243	0.257566	0.998386	0.997424
#6	24184	64	12	13	43198	FALSE	99.74243	0.257566	0.998066	0.997424
#7	43332	50	85	9	24583	FALSE	99.67804	0.321958	0.997421	0.99678
#8	46086	64	25	29	14505	TRUE	99.67804	0.321958	0.997422	0.99678
#9	28209	74	210	10	18708	TRUE	99.67804	0.321958	0.996782	0.99678
#10	48282	63	44	10	5913	TRUE	99.67804	0.321958	0.997424	0.99678
#11	24830	63	45	10	4532	TRUE	99.67804	0.321958	0.997096	0.99678
#12	27124	49	26	12	15210	FALSE	99.67804	0.321958	0.997096	0.99678
#13	48780	68	13	31	21048	TRUE	99.61365	0.386349	0.996456	0.996137
#14	39279	69	35	34	41858	TRUE	99.61365	0.386349	0.996454	0.996137
#15	38533	72	113	9	14489	TRUE	99.61365	0.386349	0.996456	0.996137
#16	42787	42	21	11	20109	TRUE	99.61365	0.386349	0.997092	0.996137
#17	29826	63	26	26	1223	TRUE	99.61365	0.386349	0.996136	0.996137
#18	47465	54	18	22	32719	TRUE	99.61365	0.386349	0.996769	0.996137
#19	30296	18	10	21	2501	FALSE	99.61365	0.386349	0.996459	0.996137
#20	35700	48	147	17	9644	TRUE	99.61365	0.386349	0.997417	0.996137
#21	24184	71	48	30	11990	TRUE	99.61365	0.386349	0.996133	0.996137
#22	41682	73	15	30	4347	TRUE	99.61365	0.386349	0.996448	0.996137
#23	36066	64	12	35	41318	TRUE	99.61365	0.386349	0.996777	0.996137
#24	44919	73	300	8	7346	TRUE	99.61365	0.386349	0.996459	0.996137
#25	45121	57	24	67	49077	TRUE	99.61365	0.386349	0.997098	0.996137
#26	27896	61	25	48	1701	FALSE	99.61365	0.386349	0.996773	0.996137
#27	24571	66	30	43	29255	TRUE	99.54926	0.450741	0.995808	0.995493
#28	15141	68	75	28	469	TRUE	99.54926	0.450741	0.99709	0.995493
#29	43350	70	57	21	1139	TRUE	99.54926	0.450741	0.996771	0.995493
#30	33704	74	11	13	33800	FALSE	99.54926	0.450741	0.997417	0.995493
#31	48411	69	105	14	39276	TRUE	99.54926	0.450741	0.996118	0.995493
#32	23806	65	5	46	1687	TRUE	99.54926	0.450741	0.996767	0.995493
#33	20863	51	20	47	13772	TRUE	99.54926	0.450741	0.99611	0.995493
#34	44423	55	12	42	6767	TRUE	99.54926	0.450741	0.995821	0.995493

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy (%)	Loss	F1 score:	Recall
#35	42735	60	187	18	39981	TRUE	99.54926	0.450741	0.996129	0.995493
#36	20337	35	19	22	1266	FALSE	99.54926	0.450741	0.996127	0.995493
#37	13566	68	7	28	25459	FALSE	99.54926	0.450741	0.995802	0.995493
#38	24145	75	35	49	3806	TRUE	99.54926	0.450741	0.996133	0.995493
#39	33922	75	64	16	31990	FALSE	99.54926	0.450741	0.99645	0.995493
#40	41188	63	16	30	23444	TRUE	99.54926	0.450741	0.996136	0.995493
#41	45632	61	76	22	45497	TRUE	99.54926	0.450741	0.997086	0.995493
#42	18833	73	6	26	8226	TRUE	99.54926	0.450741	0.995806	0.995493
#43	42796	65	85	23	1195	TRUE	99.48487	0.515132	0.996098	0.994849
#44	36389	74	7	35	43164	TRUE	99.48487	0.515132	0.995162	0.994849
#45	40021	60	26	12	28804	TRUE	99.48487	0.515132	0.995184	0.994849
#46	27713	17	7	19	11163	FALSE	99.48487	0.515132	0.995488	0.994849
#47	15422	71	13	12	46604	TRUE	99.48487	0.515132	0.994831	0.994849
#48	49942	40	19	41	5198	TRUE	99.48487	0.515132	0.996437	0.994849
#49	42205	64	26	19	37218	TRUE	99.48487	0.515132	0.995164	0.994849
#50	9501	49	35	26	3105	FALSE	99.48487	0.515132	0.995468	0.994849
#51	37031	75	129	9	19149	TRUE	99.48487	0.515132	0.995475	0.994849
#52	41171	53	22	63	22526	FALSE	99.48487	0.515132	0.995481	0.994849
#53	38555	67	37	23	14610	TRUE	99.42048	0.579524	0.994533	0.994205
#54	40967	65	8	8	32809	TRUE	99.42048	0.579524	0.994822	0.994205
#55	46208	73	45	26	47251	FALSE	99.42048	0.579524	0.994191	0.994205
#56	33945	58	52	43	37011	TRUE	99.42048	0.579524	0.99452	0.994205
#57	8080	63	11	27	13202	TRUE	99.42048	0.579524	0.994524	0.994205
#58	23690	70	140	30	6913	TRUE	99.42048	0.579524	0.994845	0.994205
#59	42705	75	22	28	26540	FALSE	99.42048	0.579524	0.99612	0.994205
#60	32073	73	16	21	16655	TRUE	99.42048	0.579524	0.994512	0.994205
#61	44460	61	5	29	14319	TRUE	99.42048	0.579524	0.994516	0.994205
#62	13770	67	34	14	27504	FALSE	99.42048	0.579524	0.995158	0.994205
#63	29351	54	33	15	10152	FALSE	99.42048	0.579524	0.995158	0.994205
#64	49732	73	139	15	47556	FALSE	99.42048	0.579524	0.994518	0.994205
#65	41739	56	32	54	34794	TRUE	99.42048	0.579524	0.994841	0.994205
#66	31207	46	28	95	1111	FALSE	99.42048	0.579524	0.994847	0.994205
#67	38265	69	32	38	28094	TRUE	99.42048	0.579524	0.99517	0.994205
#68	45818	31	5	48	1259	FALSE	99.42048	0.579524	0.994843	0.994205

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy (%)	Loss	F1 score:	Recall
#69	16402	69	26	12	3909	TRUE	99.42048	0.579524	0.995139	0.994205
#70	35655	64	66	49	7537	TRUE	99.42048	0.579524	0.995487	0.994205
#71	47634	54	28	35	47330	TRUE	99.42048	0.579524	0.99485	0.994205
#72	16110	73	130	20	34035	TRUE	99.42048	0.579524	0.994839	0.994205
#73	25865	68	18	25	3930	TRUE	99.42048	0.579524	0.995152	0.994205
#74	7987	75	22	34	46115	TRUE	99.42048	0.579524	0.995149	0.994205
#75	14362	74	80	25	25832	TRUE	99.42048	0.579524	0.994204	0.994205
#76	23522	69	23	51	3817	FALSE	99.42048	0.579524	0.994524	0.994205
#77	4874	72	59	13	2402	FALSE	99.42048	0.579524	0.994175	0.994205
#78	43023	61	157	30	13190	TRUE	99.35608	0.643915	0.994193	0.993561
#79	23296	48	69	12	9732	TRUE	99.35608	0.643915	0.994516	0.993561
#80	2928	68	29	50	1274	FALSE	99.35608	0.643915	0.995143	0.993561
#81	17461	68	25	9	32235	TRUE	99.35608	0.643915	0.994818	0.993561
#82	16989	75	52	16	17407	TRUE	99.35608	0.643915	0.994186	0.993561
#83	16558	65	14	18	7545	TRUE	99.35608	0.643915	0.994203	0.993561
#84	47448	39	79	26	27111	TRUE	99.35608	0.643915	0.993885	0.993561
#85	39494	74	131	29	7267	TRUE	99.35608	0.643915	0.99388	0.993561
#86	41066	69	108	12	8649	TRUE	99.35608	0.643915	0.994192	0.993561
#87	37363	48	20	56	23658	FALSE	99.35608	0.643915	0.995164	0.993561
#88	39251	45	20	20	28110	FALSE	99.35608	0.643915	0.995149	0.993561
#89	37956	56	131	17	8814	TRUE	99.35608	0.643915	0.994216	0.993561
#90	13092	70	13	11	7361	TRUE	99.35608	0.643915	0.994837	0.993561
#91	31631	74	91	40	13009	TRUE	99.35608	0.643915	0.993557	0.993561
#92	37617	62	62	23	6155	TRUE	99.35608	0.643915	0.995481	0.993561
#93	29279	41	34	25	15984	TRUE	99.35608	0.643915	0.994522	0.993561
#94	27835	67	158	16	29687	TRUE	99.35608	0.643915	0.994195	0.993561
#95	24846	55	104	18	4552	TRUE	99.35608	0.643915	0.994828	0.993561
#96	44773	74	36	46	48097	TRUE	99.35608	0.643915	0.993869	0.993561
#97	42955	51	32	35	24762	TRUE	99.35608	0.643915	0.994522	0.993561
#98	17978	73	23	81	20991	TRUE	99.35608	0.643915	0.99517	0.993561
#99	40912	75	21	55	32084	TRUE	99.35608	0.643915	0.994203	0.993561
#100	37574	72	172	11	25434	FALSE	99.35608	0.643915	0.994201	0.993561

Table 2: Sweep table results

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy (%)	Loss	F1 score	Recall
#1	2183	20	115	10	49662	FALSE	85.55922	14.44078	0.803969	0.855592
#2	1440	18	70	13	48130	FALSE	85.28254	14.71746	0.801377	0.852825
#3	9341	44	82	11	46233	TRUE	85.20805	14.79195	0.800913	0.85208
#4	3703	56	208	8	8789	TRUE	85.19208	14.80792	0.800792	0.851921
#5	4700	10	73	11	47655	FALSE	85.1708	14.8292	0.800286	0.851708
#6	4756	56	47	23	48567	FALSE	85.13887	14.86113	0.800549	0.851389
#7	21537	56	239	13	34971	TRUE	85.13887	14.86113	0.80022	0.851389
#8	5409	57	66	21	33799	TRUE	85.11759	14.88241	0.800219	0.851176
#9	5212	52	95	12	40357	TRUE	85.10695	14.89305	0.799922	0.851069
#10	9277	23	110	13	40650	FALSE	85.08567	14.91433	0.799509	0.850857
#11	7331	14	46	21	49342	FALSE	85.05374	14.94626	0.799273	0.850537
#12	21064	60	54	27	48564	TRUE	85.04842	14.95158	0.799667	0.850484
#13	7633	26	33	21	47381	TRUE	85.02714	14.97286	0.799128	0.850271
#14	13835	50	133	8	49159	TRUE	85.01649	14.98351	0.799132	0.850165
#15	25550	27	152	41	29848	FALSE	85.00585	14.99415	0.799053	0.850059
#16	34817	39	62	20	47165	FALSE	84.97925	15.02075	0.798736	0.849792
#17	22362	59	223	9	49654	FALSE	84.96861	15.03139	0.798446	0.849686
#18	29634	32	81	19	37313	FALSE	84.96329	15.03671	0.798702	0.849633
#19	16219	32	25	15	45837	FALSE	84.95797	15.04203	0.798366	0.84958
#20	2414	5	65	33	43097	FALSE	84.93136	15.06864	0.796775	0.849314
#21	22479	59	131	44	38596	TRUE	84.92604	15.07396	0.798257	0.84926
#22	8573	41	102	11	49296	FALSE	84.88347	15.11653	0.797511	0.848835
#23	14335	18	27	38	47879	FALSE	84.87283	15.12717	0.797782	0.848728
#24	5437	26	42	10	41939	FALSE	84.86751	15.13249	0.797254	0.848675
#25	8123	41	113	13	46326	TRUE	84.86219	15.13781	0.797421	0.848622
#26	24909	23	18	18	38196	FALSE	84.85687	15.14313	0.797757	0.848569
#27	30574	36	50	39	39554	FALSE	84.84091	15.15909	0.797417	0.848409
#28	22556	33	38	35	49184	TRUE	84.83559	15.16441	0.797445	0.848356
#29	6936	58	40	8	19135	TRUE	84.82494	15.17506	0.797338	0.848249
#30	1683	60	242	11	37021	FALSE	84.81962	15.18038	0.796563	0.848196
#31	46376	21	50	9	41094	TRUE	84.81962	15.18038	0.797333	0.848196
#32	3845	54	178	14	28020	TRUE	84.81962	15.18038	0.79694	0.848196
#33	39011	46	65	44	40946	FALSE	84.80898	15.19102	0.797078	0.84809
#34	49382	11	28	19	47783	TRUE	84.80366	15.19634	0.796965	0.848037

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy (%)	Loss	F1 score	Recall
#35	12018	57	47	32	4855	TRUE	84.80366	15.19634	0.797027	0.848037
#36	22793	53	358	12	44669	TRUE	84.79834	15.20166	0.796788	0.847983
#37	23196	58	59	25	42749	TRUE	84.77174	15.22826	0.796825	0.847717
#38	13142	48	19	9	49229	FALSE	84.76109	15.23891	0.796037	0.847611
#39	32166	60	114	9	48811	TRUE	84.75045	15.24955	0.796486	0.847505
#40	30314	60	93	17	36035	TRUE	84.75045	15.24955	0.796613	0.847505
#41	38997	55	472	53	49697	TRUE	84.74513	15.25487	0.796629	0.847451
#42	41151	50	25	20	42635	FALSE	84.74513	15.25487	0.796047	0.847451
#43	9142	19	40	40	40851	FALSE	84.73981	15.26019	0.796471	0.847398
#44	19702	50	168	14	40267	TRUE	84.72385	15.27615	0.79606	0.847238
#45	41794	43	100	28	42759	FALSE	84.71853	15.28147	0.796245	0.847185
#46	44255	15	134	20	46210	TRUE	84.70256	15.29744	0.795821	0.847026
#47	45535	48	174	14	21524	TRUE	84.69724	15.30276	0.79611	0.846972
#48	46653	50	413	33	44093	TRUE	84.6866	15.3134	0.795676	0.846866
#49	24448	20	160	14	31998	FALSE	84.67064	15.32936	0.795356	0.846706
#50	49804	25	35	13	28976	TRUE	84.67064	15.32936	0.795599	0.846706
#51	34140	40	334	17	45690	TRUE	84.66532	15.33468	0.795277	0.846653
#52	27215	29	101	17	30239	FALSE	84.66	15.34	0.795439	0.8466
#53	39673	34	36	11	49459	FALSE	84.64936	15.35064	0.795146	0.846494
#54	42439	44	428	23	43948	TRUE	84.61211	15.38789	0.794683	0.846121
#55	30132	33	126	37	39436	FALSE	84.60679	15.39321	0.795444	0.846068
#56	40301	50	49	8	43280	TRUE	84.60147	15.39853	0.794878	0.846015
#57	6344	57	345	12	48776	TRUE	84.56422	15.43578	0.794206	0.845642
#58	18410	36	98	33	39410	FALSE	84.56422	15.43578	0.794787	0.845642
#59	12599	28	15	13	41572	FALSE	84.54826	15.45174	0.793875	0.845483
#60	2279	54	157	10	17933	TRUE	84.54294	15.45706	0.793911	0.845429
#61	18007	26	154	15	40121	FALSE	84.5323	15.4677	0.793894	0.845323
#62	20252	25	233	30	46632	FALSE	84.52166	15.47834	0.79373	0.845217
#63	19589	47	22	9	43751	TRUE	84.51634	15.48366	0.793347	0.845163
#64	31091	46	75	49	29871	FALSE	84.49505	15.50495	0.793981	0.844951
#65	38257	59	345	51	49653	TRUE	84.49505	15.50495	0.793792	0.844951
#66	39267	39	44	12	42185	TRUE	84.48441	15.51559	0.793646	0.844844
#67	3259	50	243	15	20432	TRUE	84.48441	15.51559	0.793245	0.844844
#68	23328	34	117	48	33978	FALSE	84.46313	15.53687	0.793453	0.844631

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy (%)	Loss	F1 score	Recall
#69	19788	10	12	30	49605	TRUE	84.45248	15.54752	0.79288	0.844525
#70	14995	59	23	19	44270	TRUE	84.45248	15.54752	0.792891	0.844525
#71	25889	37	114	27	38536	FALSE	84.45248	15.54752	0.793306	0.844525
#72	40773	40	289	15	43456	TRUE	84.44184	15.55816	0.792871	0.844418
#73	2728	59	199	48	14642	TRUE	84.4046	15.5954	0.792851	0.844046
#74	22845	23	135	42	24886	FALSE	84.39928	15.60072	0.792975	0.843993
#75	44913	9	8	11	23586	TRUE	84.37799	15.62201	0.791993	0.84378
#76	6796	57	358	14	905	TRUE	84.36203	15.63797	0.792606	0.84362
#77	3910	17	125	29	46894	TRUE	84.34075	15.65925	0.791768	0.843407
#78	47514	45	463	12	37523	TRUE	84.32478	15.67522	0.791632	0.843248
#79	32678	20	130	54	38507	FALSE	84.31414	15.68586	0.791712	0.843141
#80	42659	56	40	53	48790	TRUE	84.23965	15.76035	0.791183	0.842397
#81	5734	18	17	53	47092	FALSE	84.22901	15.77099	0.791005	0.84229
#82	30410	31	143	73	36424	FALSE	84.20773	15.79227	0.790901	0.842077
#83	5417	56	67	55	12335	TRUE	84.19176	15.80824	0.791069	0.841918
#84	46756	30	53	59	47368	TRUE	84.18112	15.81888	0.790516	0.841811
#85	15191	58	248	22	27959	TRUE	84.1758	15.8242	0.790192	0.841758
#86	26922	13	456	46	33197	TRUE	84.11195	15.88805	0.788879	0.84112
#87	33662	31	146	47	22679	FALSE	84.10663	15.89337	0.789865	0.841066
#88	36704	56	23	66	43921	FALSE	84.10131	15.89869	0.789529	0.841013
#89	13175	8	163	44	46337	FALSE	84.08003	15.91997	0.788494	0.8408
#90	40387	50	495	73	45977	TRUE	84.0747	15.9253	0.788563	0.840747
#91	39490	34	30	94	47007	FALSE	84.0481	15.9519	0.789289	0.840481
#92	33553	59	311	54	23999	TRUE	84.02682	15.97318	0.789412	0.840268
#93	44187	25	335	21	49092	TRUE	83.98425	16.01575	0.788006	0.839843
#94	22499	17	476	57	32337	TRUE	83.92572	16.07428	0.786709	0.839257
#95	22849	27	311	30	26296	FALSE	83.84059	16.15941	0.78628	0.838406
#96	1706	51	82	78	47735	FALSE	83.72885	16.27115	0.785836	0.837288
#97	13874	60	73	17	74	TRUE	83.70225	16.29775	0.789943	0.837022
#98	9505	34	57	85	44267	TRUE	83.68096	16.31904	0.785778	0.83681
#99	49448	14	284	181	21634	FALSE	82.94669	17.05331	0.772306	0.829467
#100	2821	5	492	255	6274	TRUE	77.57795	22.42205	0.735649	0.77578

Table 3: Results from hyperparameter Sweep on NSL-KDD dataset

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy (%)	Loss	F1 score:	Recall
#1	32288	73	24	13	3962	FALSE	100	0	1	1
#2	42252	85	55	9	4291	FALSE	100	0	1	1
#3	34273	28	40	11	2188	FALSE	100	0	1	1
#4	33440	59	10	12	2332	FALSE	100	0	1	1
#5	39941	86	94	17	4935	FALSE	100	0	1	1
#6	33794	43	82	12	2269	FALSE	100	0	1	1
#7	48630	71	189	18	1102	TRUE	100	0	1	1
#8	49603	69	142	9	4854	TRUE	100	0	1	1
#9	42009	28	21	8	2595	TRUE	100	0	1	1
#10	36982	91	184	17	1037	TRUE	100	0	1	1
#11	46273	94	141	10	4128	TRUE	100	0	1	1
#12	45590	74	73	9	2113	TRUE	100	0	1	1
#13	43385	34	16	11	1672	TRUE	100	0	1	1
#14	35093	49	88	46	2009	TRUE	100	0	1	1
#15	48847	52	10	18	829	TRUE	100	0	1	1
#16	40440	60	132	8	1144	TRUE	100	0	1	1
#17	20793	56	52	24	354	TRUE	100	0	1	1
#18	35505	44	66	28	558	TRUE	100	0	1	1
#19	40822	76	228	8	818	TRUE	100	0	1	1
#20	10527	63	29	8	971	FALSE	99.99088	0.009118	0.999908	0.999909
#21	48452	69	82	11	4869	FALSE	99.99088	0.009118	0.999908	0.999909
#22	47007	39	48	8	1828	FALSE	99.99088	0.009118	0.999909	0.999909
#23	49384	59	203	8	1483	TRUE	99.99088	0.009118	0.999909	0.999909
#24	46441	45	30	13	1473	TRUE	99.99088	0.009118	0.999908	0.999909
#25	44380	60	169	22	2068	TRUE	99.99088	0.009118	0.999909	0.999909
#26	34857	78	54	13	2190	FALSE	99.99088	0.009118	0.999909	0.999909
#27	33110	80	10	27	4321	FALSE	99.99088	0.009118	0.999908	0.999909
#28	36230	90	280	15	446	TRUE	99.99088	0.009118	0.999908	0.999909
#29	40057	80	186	16	4587	TRUE	99.99088	0.009118	0.999908	0.999909
#30	38814	39	16	10	2529	FALSE	99.99088	0.009118	0.999908	0.999909
#31	40902	44	22	15	1090	FALSE	99.99088	0.009118	0.999908	0.999909
#32	34261	95	159	17	1421	TRUE	99.99088	0.009118	0.999908	0.999909
#33	37306	93	41	19	4843	TRUE	99.99088	0.009118	0.99991	0.999909
#34	34516	56	106	10	2465	TRUE	99.99088	0.009118	0.999908	0.999909

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy (%)	Loss	F1 score:	Recall
#35	35015	55	33	10	3021	TRUE	99.99088	0.009118	0.999908	0.999909
#36	43600	38	72	24	1681	TRUE	99.99088	0.009118	0.999908	0.999909
#37	42042	100	7	11	1977	TRUE	99.99088	0.009118	0.999908	0.999909
#38	30241	76	173	12	382	TRUE	99.99088	0.009118	0.999908	0.999909
#39	46438	47	14	36	2805	TRUE	99.99088	0.009118	0.999909	0.999909
#40	41102	56	132	23	2143	TRUE	99.99088	0.009118	0.999908	0.999909
#41	44810	83	218	11	826	TRUE	99.99088	0.009118	0.999908	0.999909
#42	48245	51	82	28	658	TRUE	99.99088	0.009118	0.999908	0.999909
#43	42213	77	257	18	175	TRUE	99.99088	0.009118	0.999909	0.999909
#44	44415	85	12	32	695	TRUE	99.99088	0.009118	0.999909	0.999909
#45	2223	97	60	70	525	FALSE	99.98176	0.018237	0.999814	0.999818
#46	18043	26	52	91	2786	TRUE	99.98176	0.018237	0.999817	0.999818
#47	22910	64	22	21	1991	FALSE	99.98176	0.018237	0.999814	0.999818
#48	44874	89	71	20	4331	FALSE	99.98176	0.018237	0.999817	0.999818
#49	44564	95	155	16	845	TRUE	99.98176	0.018237	0.999817	0.999818
#50	34323	71	118	8	1343	TRUE	99.98176	0.018237	0.999814	0.999818
#51	29198	39	38	13	3470	TRUE	99.98176	0.018237	0.999817	0.999818
#52	48942	89	308	12	4355	TRUE	99.98176	0.018237	0.999815	0.999818
#53	45186	46	40	9	182	TRUE	99.98176	0.018237	0.999817	0.999818
#54	32710	69	30	24	3289	TRUE	99.98176	0.018237	0.999816	0.999818
#55	33706	43	33	17	683	TRUE	99.98176	0.018237	0.999817	0.999818
#56	49345	31	6	41	130	TRUE	99.98176	0.018237	0.999818	0.999818
#57	32748	44	26	12	2168	FALSE	99.98176	0.018237	0.999814	0.999818
#58	40224	31	6	51	2597	TRUE	99.98176	0.018237	0.999814	0.999818
#59	44720	56	93	47	1589	TRUE	99.98176	0.018237	0.999814	0.999818
#60	49174	30	106	21	753	TRUE	99.98176	0.018237	0.999817	0.999818
#61	42437	64	43	32	1029	TRUE	99.98176	0.018237	0.999815	0.999818
#62	49356	69	31	9	1657	TRUE	99.98176	0.018237	0.999815	0.999818
#63	46452	67	149	18	359	TRUE	99.98176	0.018237	0.999817	0.999818
#64	36443	66	243	19	1375	TRUE	99.98176	0.018237	0.999818	0.999818
#65	49390	83	9	41	343	TRUE	99.98176	0.018237	0.999814	0.999818
#66	27793	86	92	14	48	TRUE	99.98176	0.018237	0.999818	0.999818
#67	41468	72	55	41	113	TRUE	99.98176	0.018237	0.999817	0.999818
#68	39991	58	183	31	404	TRUE	99.98176	0.018237	0.999818	0.999818

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy (%)	Loss	F1 score:	Recall
#69	43399	69	13	26	815	TRUE	99.98176	0.018237	0.999817	0.999818
#70	43019	82	283	30	1090	TRUE	99.98176	0.018237	0.999817	0.999818
#71	44355	87	236	31	1670	TRUE	99.98176	0.018237	0.999817	0.999818
#72	34442	21	72	24	1619	FALSE	99.97265	0.027355	0.999724	0.999726
#73	40895	64	94	38	1544	TRUE	99.97265	0.027355	0.999726	0.999726
#74	37448	56	124	32	1111	TRUE	99.97265	0.027355	0.999725	0.999726
#75	46931	87	139	37	753	TRUE	99.97265	0.027355	0.999725	0.999726
#76	38381	27	114	23	745	TRUE	99.97265	0.027355	0.999722	0.999726
#77	30490	16	149	40	529	TRUE	99.97265	0.027355	0.999726	0.999726
#78	33268	64	35	35	543	TRUE	99.97265	0.027355	0.999724	0.999726
#79	43067	6	46	107	4819	FALSE	99.96353	0.036473	0.999627	0.999635
#80	37454	32	145	34	2736	FALSE	99.96353	0.036473	0.999628	0.999635
#81	47186	91	130	31	3615	TRUE	99.96353	0.036473	0.999634	0.999635
#82	16459	55	103	18	612	TRUE	99.96353	0.036473	0.999626	0.999635
#83	44662	99	257	69	1878	TRUE	99.96353	0.036473	0.999636	0.999635
#84	38146	78	179	122	1353	TRUE	99.95441	0.045591	0.999545	0.999544
#85	40584	56	46	21	2993	TRUE	99.95441	0.045591	0.999547	0.999544
#86	37490	81	167	42	215	TRUE	99.95441	0.045591	0.999544	0.999544
#87	48991	18	191	23	3124	TRUE	99.95441	0.045591	0.999544	0.999544
#88	49537	77	105	42	1373	TRUE	99.95441	0.045591	0.999548	0.999544
#89	22704	39	35	39	52	TRUE	99.95441	0.045591	0.999532	0.999544
#90	26805	31	162	210	1432	FALSE	99.94529	0.05471	0.999456	0.999453
#91	41224	89	156	58	4696	FALSE	99.94529	0.05471	0.999456	0.999453
#92	43314	70	208	14	131	TRUE	99.94529	0.05471	0.99945	0.999453
#93	48955	74	276	39	220	FALSE	99.90882	0.091183	0.999089	0.999088
#94	39281	96	469	48	260	TRUE	99.8997	0.100301	0.999015	0.998997
#95	20257	54	295	97	3354	FALSE	99.89058	0.109419	0.998901	0.998906
#96	44007	95	287	247	593	FALSE	99.89058	0.109419	0.99892	0.998906
#97	5987	99	284	104	4472	TRUE	99.87234	0.127656	0.998743	0.998723
#98	34197	39	228	147	701	TRUE	99.80852	0.191484	0.998096	0.998085
#99	13391	34	187	133	4610	FALSE	99.80852	0.191484	0.998049	0.998085
#100	19536	69	366	242	4519	TRUE	99.58968	0.410322	0.995633	0.995897
#101	5246	13	189	92	3460	FALSE	99.38908	0.610924	0.993329	0.993891
#102	9294	29	434	203	2875	FALSE	99.09729	0.902708	0.990637	0.990973

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy (%)	Loss	F1 score:	Recall
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Table 4: Results from hyperparameter sweep on the UNSW-Bot-IoT dataset

Run	Clauses	Epochs	Forget_rate	Max_literals	Threshold	Weighted_Clauses	Accuracy	F1 score:	Loss	Recall
#1	44985	41	347	112	1769	FALSE	82.10986	0.817357	17.89014	0.821099
#2	30525	66	481	170	4629	FALSE	81.22101	0.806783	18.77899	0.81221
#3	28107	90	278	133	3711	FALSE	81.94222	0.816793	18.05778	0.819422
#4	17983	69	60	83	2969	TRUE	81.89934	0.82115	18.10066	0.818993
#5	15026	23	126	59	4125	FALSE	81.92273	0.814492	18.07727	0.819227
#6	21247	67	321	144	1879	TRUE	81.9968	0.816739	18.0032	0.819968
#7	33429	60	66	253	4872	TRUE	82.2541	0.82187	17.7459	0.822541
#8	20446	38	37	30	3707	FALSE	82.23461	0.818815	17.76539	0.822346
#9	38518	46	347	199	4863	FALSE	80.81946	0.803873	19.18054	0.808195
#10	22344	42	107	68	3161	FALSE	82.43343	0.81667	17.56657	0.824334
#11	15302	53	133	10	3016	FALSE	82.49581	0.820695	17.50419	0.824958
#12	18231	93	224	155	1865	FALSE	81.87985	0.81325	18.12015	0.818798
#13	40946	41	189	126	4029	FALSE	82.24241	0.816708	17.75759	0.822424
#14	2383	47	23	76	1714	FALSE	82.09037	0.815976	17.90963	0.820904
#15	32756	52	461	153	1986	TRUE	81.42762	0.810679	18.57238	0.814276
#16	45743	8	430	40	1460	TRUE	80.05536	0.791241	19.94464	0.800554
#17	18843	19	188	119	4423	TRUE	81.64594	0.809624	18.35406	0.816459
#18	16325	46	172	53	4266	FALSE	82.17224	0.818207	17.82776	0.821722
#19	30546	74	204	23	3894	TRUE	82.527	0.820177	17.473	0.82527
#20	12792	31	27	17	3470	FALSE	82.35936	0.819247	17.64064	0.823594
#21	22118	54	207	11	3916	FALSE	82.12935	0.817615	17.87065	0.821294
#22	39923	98	345	184	2975	FALSE	82.0007	0.814888	17.9993	0.820007
#23	23689	50	114	70	2325	FALSE	82.23461	0.818945	17.76539	0.822346
#24	42324	57	23	243	1668	FALSE	81.17422	0.811305	18.82578	0.811742
#25	35776	31	17	50	3104	FALSE	81.7434	0.812555	18.2566	0.817434
#26	9696	54	138	14	4277	FALSE	82.39835	0.820622	17.60165	0.823983
#27	17905	64	57	15	3973	FALSE	82.08647	0.815781	17.91353	0.820865
#28	16997	17	47	103	3950	FALSE	82.31648	0.818757	17.68352	0.823165
#29	15497	49	193	70	4568	FALSE	82.60887	0.819861	17.39113	0.826089
#30	38478	61	296	77	2461	TRUE	81.62255	0.81189	18.37745	0.816225
#31	44621	95	331	95	2987	TRUE	81.73171	0.812896	18.26829	0.817317
#32	26562	9	10	42	3919	FALSE	81.70052	0.812942	18.29948	0.817005
#33	8342	59	162	27	3574	FALSE	82.19173	0.815344	17.80827	0.821917
#34	15661	18	123	205	3198	FALSE	81.80968	0.812343	18.19032	0.818097

#35	12333	93	342	86	2033	FALSE	82.08257	0.815959	17.91743	0.820826
#36	27397	92	76	192	2364	TRUE	81.68882	0.814244	18.31118	0.816888
#37	23122	64	35	18	2076	FALSE	82.0085	0.816491	17.9915	0.820085
#38	16783	12	240	244	2341	TRUE	79.62263	0.788766	20.37737	0.796226
#39	31235	99	146	239	1446	FALSE	81.41983	0.809846	18.58017	0.814198
#40	21981	20	33	60	2641	FALSE	81.82137	0.813386	18.17863	0.818214
#41	23849	9	255	27	2175	TRUE	80.70251	0.796039	19.29749	0.807025
#42	19092	50	91	141	4893	FALSE	82.15274	0.818582	17.84726	0.821527
#43	41624	56	368	97	963	TRUE	81.14304	0.810938	18.85696	0.81143
#44	20069	38	151	156	2128	FALSE	82.258	0.819931	17.742	0.82258
#45	17902	38	347	65	4222	FALSE	81.68492	0.810412	18.31508	0.816849
#46	15778	52	110	17	2241	FALSE	82.40614	0.822804	17.59386	0.824061
#47	36748	51	418	208	117	TRUE	78.42969	0.782542	21.57031	0.784297
#48	10756	71	176	31	1609	TRUE	82.62446	0.823803	17.37554	0.826245
#49	10405	52	148	77	4697	FALSE	81.76289	0.812204	18.23711	0.817629
#50	5859	57	344	95	1932	TRUE	81.27948	0.809106	18.72052	0.812795
#51	42156	20	244	30	4045	FALSE	81.46271	0.809485	18.53729	0.814627
#52	18077	32	162	10	4304	FALSE	81.66933	0.809074	18.33067	0.816693
#53	18137	43	74	65	4826	FALSE	81.89934	0.813854	18.10066	0.818993
#54	27035	56	132	35	3131	FALSE	82.74921	0.825193	17.25079	0.827492
#55	19277	55	46	186	4475	TRUE	81.93833	0.814199	18.06167	0.819383
#56	10969	54	73	30	4654	FALSE	82.44903	0.82076	17.55097	0.82449
#57	46926	97	128	39	4470	FALSE	81.94222	0.818011	18.05778	0.819422
#58	5924	48	254	78	4219	FALSE	81.9968	0.815975	18.0032	0.819968
#59	1903	38	162	12	4329	FALSE	81.31067	0.810009	18.68933	0.813107
#60	15342	34	29	71	4321	FALSE	82.258	0.819316	17.742	0.82258
#61	25875	37	96	48	3228	FALSE	81.97731	0.822478	18.02269	0.819773
#62	7593	37	38	8	2421	FALSE	81.97731	0.812231	18.02269	0.819773
#63	20248	43	233	33	2081	FALSE	81.44322	0.808439	18.55678	0.814432
#64	36004	84	377	75	827	TRUE	81.77849	0.812635	18.22151	0.817785
#65	27107	19	54	180	392	TRUE	81.01828	0.807501	18.98172	0.810183
#66	13745	62	80	59	3026	FALSE	82.32038	0.815708	17.67962	0.823204
#67	18347	88	214	33	4936	FALSE	81.20541	0.802473	18.79459	0.812054
#68	49762	57	364	149	4301	FALSE	81.36525	0.810925	18.63475	0.813652

#69	35770	11	90	56	366	FALSE	80.55047	0.799825	19.44953	0.805505
#70	41373	94	318	181	2787	TRUE	82.13715	0.816769	17.86285	0.821371
#71	7759	27	399	141	2618	TRUE	79.7006	0.789006	20.2994	0.797006
#72	16823	92	176	246	2164	TRUE	81.58746	0.814311	18.41254	0.815875
#73	13445	43	95	25	3580	FALSE	82.38665	0.818766	17.61335	0.823867
#74	44542	100	297	254	4904	FALSE	81.73171	0.814764	18.26829	0.817317
#75	24898	77	214	182	3121	FALSE	81.64984	0.812035	18.35016	0.816498
#76	14126	47	202	109	4074	FALSE	81.96951	0.81624	18.03049	0.819695
#77	22314	15	97	176	2774	FALSE	81.96172	0.813653	18.03828	0.819617
#78	5160	24	453	181	3960	TRUE	78.44918	0.770638	21.55082	0.784492
#79	10127	76	26	37	3485	FALSE	82.18783	0.818519	17.81217	0.821878
#80	34367	30	151	137	3952	FALSE	82.02409	0.815906	17.97591	0.820241
#81	43701	24	157	70	3761	TRUE	81.37694	0.810575	18.62306	0.813769
#82	2874	28	72	206	2679	TRUE	81.51339	0.810594	18.48661	0.815134
#83	1569	33	301	215	399	TRUE	80.23859	0.798057	19.76141	0.802386
#84	16652	85	439	209	4477	FALSE	81.01828	0.803725	18.98172	0.810183
#85	16600	81	78	241	3920	FALSE	82.41004	0.817109	17.58996	0.8241
#86	14414	75	445	225	978	TRUE	81.39644	0.808327	18.60356	0.813964
#87	20764	23	38	52	3400	FALSE	82.70243	0.82441	17.29757	0.827024
#88	8011	17	18	201	4801	TRUE	82.22292	0.814569	17.77708	0.822229
#89	17971	43	106	21	3507	FALSE	82.35936	0.81893	17.64064	0.823594
#90	1840	24	348	228	2318	FALSE	77.29913	0.759034	22.70087	0.772991
#91	17400	61	65	33	47	TRUE	77.20947	0.767337	22.79053	0.772095
#92	36813	72	418	51	1722	TRUE	81.82137	0.815118	18.17863	0.818214
#93	20026	34	30	76	3213	FALSE	82.03969	0.816276	17.96031	0.820397
#94	22413	52	124	31	3224	FALSE	82.10206	0.820402	17.89794	0.821021
#95	9683	58	115	227	4072	FALSE	82.07477	0.81735	17.92523	0.820748
#96	1880	92	256	98	345	FALSE	81.17032	0.805908	18.82968	0.811703

Table 5: Results from Sweeping over the UNSW-NB15 dataset