

	Parameters:		Model Name	Training Loss	Training Acc	Val Loss	Val Acc	s pr. epoch	TP	FP	FN	TN	Epoch	Accuracy	Precision	Recall	Specificity	F1
	Standard, lr=0.00005, 64 bs, 150		HACNN	0.061	0.980	0.853	0.779	3,000	67,000	10,000	7,000	66,000	100,000	0.887	0.870	0.905	0.868	0.887
			VGG_our	0.012	0.999	1.580	0.726	7,000	53,000	24,000	19,000	54,000	100,000	0.713	0.688	0.736	0.692	0.711
			VGG_origin	0.001	1.000	3.900	0.728	13,000	62,000	15,000	24,000	49,000	100,000	0.740	0.805	0.721	0.766	0.761
			LeNet_origin	0.038	0.996	0.973	0.701	1,000	47,000	39,000	22,000	51,000	100,000	0.616	0.547	0.681	0.567	0.606
			LeNet_ours	0.048	0.994	0.807	0.745	2,000	55,000	22,000	24,000	49,000	100,000	0.693	0.714	0.696	0.690	0.705
	Learning rate																	
		Adam																
		0.000008	HACNN	0.459	0.779	0.457	0.788	6,000	67,000	10,000	19,000	54,000	100,000	0.807	0.870	0.779	0.844	0.822
	SGD	0.00001	HACNN	0.512	0.709	0.617	0.646	7,000	69,000	1,000	58,000	22,000	40,000	0.607	0.986	0.543	0.957	0.701
	SGD	0.000007	LeNet_ours	0.353	0.838	0.392	0.813	7,000	56,000	14,000	23,000	57,000	100,000	0.753	0.800	0.709	0.803	0.752
	SGD	0.000007	VGG_our	2.811	0.875	0.360	0.842	14,000	55,000	15,000	15,000	65,000	100,000	0.800	0.786	0.786	0.813	0.786
		0.000008	VGG_our	0.308	0.874	0.533	0.726	7,000	61,000	16,000	22,000	51,000	100,000	0.747	0.792	0.735	0.761	0.763
		0.000008	LeNet_ours	0.352	0.861	0.541	0.712	2,000	57,000	20,000	24,000	49,000	100,000	0.707	0.740	0.704	0.710	0.722
		0.000001	VGG_our	0.376	0.849	0.407	0.798	7,000	52,000	18,000	21,000	59,000	300,000	0.740	0.743	0.712	0.766	0.727
		0.00005	LeNet_ours	0.045	0.992	0.743	0.772	2,000	54,000	16,000	14,000	66,000	100,000	0.800	0.771	0.794	0.805	0.783
		0.00001	LeNet_ours	0.320	0.902	0.442	0.770	1,000	65,000	15,000	26,000	44,000	100,000	0.720	0.813	0.714	0.746	0.760
		0.000005	LeNet_ours	Poor graph curves														
		0.000008	LeNet_ours	0.155	0.960	0.502	0.762	2,000	52,000	18,000	12,000	68,000	300,000	0.800	0.742	0.812	0.790	0.776
		0.000008	LeNet_ours	0.332	0.882	0.430	0.774	2,000	51,000	19,000	22,000	58,000	100,000	0.726	0.728	0.698	0.753	0.713
	Batch size																	
	lr=0.000008	32	HACNN	0.433	0.800	0.453	0.786	6,000	61,000	16,000	20,000	53,000	100,000	0.760	0.792	0.753	0.768	0.772
	lr=0.000008	128	HACNN	0.491	0.759	0.515	0.744	6,000	64,000	13,000	20,000	53,000	100,000	0.780	0.831	0.762	0.803	0.795
	lr=0.000008	32	VGG_our	0.184	0.940	0.636	0.720	8,000	45,000	32,000	10,000	63,000	100,000	0.720	0.584	0.818	0.663	0.682
	lr=0.000008	128	VGG_our	0.359	0.841	0.510	0.737	7,000	62,000	15,000	21,000	52,000	100,000	0.760	0.805	0.747	0.776	0.775
	0.000008	32	LeNet ours	0.303	0.879	0.534	0.716	3,000	56,000	21,000	20,000	53,000	100,000	0.727	0.727	0.737	0.716	0.732
	0.000008	128	LeNet ours	0.417	0.818	0.535	0.717	2,000	43,000	34,000	13,000	60,000	100,000	0.687	0.558	0.768	0.638	0.647
	0.000008	64	LeNet ours	0.155	0.960	0.502	0.762	2,000	52,000	18,000	12,000	68,000	300,000	0.800	0.742	0.812	0.790	0.776
	0.000008	32	LeNet ours	0.080	0.979	0.570	0.772	3,000	55,000	15,000	13,000	67,000	300,000	0.810	0.785	0.808	0.817	0.797
	0.000008	128	LeNet ours	0.205	0.940	0.477	0.780	2,000	55,000	15,000	14,000	66,000	300,000	0.800	0.780	0.797	0.814	0.791
	Image size																	
	0.000008	256, bs 32	HAnet	0.452	0.780	0.515	0.754	19,000	69,000	8,000	32,000	41,000	100,000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
														0.733	0.896	0.683	0.837	0.775
	0.000008	256, bs 32	LeNet ours	0.136	0.972	0.604	0.729	7,000	55,000	22,000	26,000	47,000	100,000	0.680	0.714	0.679	0.681	0.696
	0.000008	256, bs 32	VGG_our	0.059	0.999	0.935	0.723	23,000	49,000	28,000	20,000	53,000	100,000	0.680	0.636	0.710	0.654	0.671
														#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	Activation function																	
														#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	lr=0.000008	ELU	HACNN, 64	0.452	0.783	0.526	0.744	6,000	55,000	22,000	21,000	52,000	100,000	0.713	0.714	0.724	0.703	0.719
	lr=0.000008	swish	HACNN, 64	0.5959	0.6517	0.6103	0.633	8	33	44	21	52	100	0.567	0.429	0.611	0.542	0.504
	lr=0.000008	LeakyRelu	HACNN, 64	0.51275	0.7463	0.502	0.7277	6	50	27	13	60	100	0.733	0.649	0.794	0.690	0.714
	lr=0.000008	PReLU	HACNN, 64	0.4365	0.8026	0.484	0.7701	8	69	8	27	46	100	0.767	0.896	0.719	0.852	0.798
	lr=0.000008	PReLU	HACNN, 32	0.4087	0.8091	0.49	0.754	9	62	15	14	59	100	0.807	0.805	0.816	0.797	0.810
	lr=0.000008	PReLU	HACNN, 32	0.4789	0.7716	0.4911	0.7643	8	59	20	18	59	100	0.756	0.747	0.766	0.747	0.756
														#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
	lr=0.000007	PReLU	VGG_theirs	0.316	0.8577	0.3978	0.8235	18	52	18	12	68	100	0.800	0.743	0.813	0.791	0.776
	lr=0.000007	ELU	VGG_theirs	0.0276	0.9992	0.6276	0.825	15	58	12	13	67	100	0.833	0.829	0.817	0.848	0.823
	0.000008	LeakyRelu	LeNet ours, 32	0.338	0.8752	0.5432	0.7086	3	54	24	19	54	100	0.715	0.692	0.740	0.692	0.715
	0.000008	Swish	LeNet ours, 32	0.5218	0.7333	0.5731	0.6501	3	67	11	28	44	100	0.740	0.859	0.705	0.800	0.775
	0.000008	ELU	LeNet ours, 32	0.3513	0.8695	0.5859	0.6955	3	40	38	14	58	100	0.653	0.513	0.741	0.604	0.606
	0.000008	PReLU	LeNet ours, 32	0.326	0.8744	0.5317	0.7233	4	67	11	29	43	100	0.733	0.859	0.698	0.796	0.770
	0.000008	RelU	LeNet ours,32	0.185	0.930	0.590	0.729	3,000	56,000	21,000	25,000	48,000	300,000	0.693	0.727	0.691	0.696	0.709
	0.000008	ELU	VGG, 128	0.4046	0.8214	0.5655	0.6969	7	57	21	21	51	100	0.720	0.731	0.731	0.708	0.731
	0.000008	Swish	VGG, 128	0.555	0.7023	0.5781	0.6618	9	49	29	19	53	100	0.680	0.628	0.721	0.646	0.671
	0.000008	LeakyRelu	VGG, 128	0.430	0.813	0.526	0.710	8,000	63,000	15,000	21,000	51,000	100,000	0.760	0.808	0.750	0.773	0.778
	0.000008	PReLU	VGG, 128	0.3542	0.8524	0.49	0.7782	11	64	14	23	49	100	0.753	0.821	0.736	0.778	0.776
	lr=0.000008	ELU	HACNN, 32	0.4165	0.8238	0.4944	0.7628	7	59	19	16	56	100	0.767	0.756	0.787	0.747	0.771
	lr=0.000008	Swish	HACNN, 32	0.5822	0.6949	0.5817	0.7066	8	51	27	20	52	100	0.687	0.654	0.718	0.658	0.685
	lr=0.000008	LeakyRelu	HACNN, 32	0.4761	0.7667	0.5154	0.7482	6	53	25	11	61	100	0.760	0.679	0.828	0.709	0.746

	lr=0,000008	PRELU	HACNN, 32	0,4569	0,7847	0,5757	0,7057	9	73	5	34	38	100	0,740	0,936	0,682	0,884	0,789	
														#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
														#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
#REF!																			
#REF!																			
OLD																			
Previous parameterrs	Model Name	Training Loss	Training Acc	Val Loss	Val Acc	s pr. epoch	TP	FP	FN	TN	Epoch	Accuracy	Precision	Recall	Specificity	F1			
	HACNN	0,194	0,918	0,370	0,861	4,000	62,000	8,000	11,000	69,000	100,000	0,873	0,886	0,849	0,896	0,867			
	VGG_our	0,019	0,998	1,032	0,783	7,000	59,000	11,000	15,000	65,000	100,000	0,827	0,843	0,797	0,855	0,819			
	VGG_origin	0,016	1,000	2,501	0,808	13,000	56,000	14,000	13,000	67,000	100,000	0,820	0,800	0,812	0,827	0,806			
	LeNet_origin	0,053	0,995	0,737	0,757	1,000	49,000	21,000	15,000	65,000	100,000	0,760	0,700	0,766	0,756	0,731			
	LeNet_ours	0,045	0,992	0,743	0,772	2,000	54,000	16,000	14,000	66,000	100,000	0,800	0,771	0,794	0,805	0,783			
	Learning rate																		
	Adam																		
	0,0001	VGG_our	0,126	0,956	0,583	0,801	7,000	52,000	18,000	15,000	65,000	40,000	0,780	0,743	0,776	0,783	0,759		
	0,00001	VGG_our	0,512	0,709	0,617	0,646	7,000	69,000	1,000	58,000	22,000	40,000	0,607	0,986	0,543	0,957	0,701		
	0,000007	VGG_our	0,353	0,838	0,392	0,813	7,000	56,000	14,000	23,000	57,000	100,000	0,753	0,800	0,709	0,803	0,752		
	0,000007	VGG_origin	2,811	0,875	0,360	0,842	14,000	55,000	15,000	15,000	65,000	100,000	0,800	0,786	0,786	0,813	0,786		
	0,000005	VGG_our	0,432	0,786	0,432	0,796	13,000	43,000	27,000	17,000	63,000	40,000	0,707	0,614	0,717	0,700	0,662		
	0,000001	VGG_our	0,679	0,579	0,688	0,588	7,000	42,000	28,000	37,000	43,000	40,000	0,567	0,600	0,532	0,606	0,564		
	0,000001	VGG_our	0,376	0,849	0,407	0,798	7,000	52,000	18,000	21,000	59,000	300,000	0,740	0,743	0,712	0,766	0,727		
	0,00005	LeNet_ours	0,045	0,992	0,743	0,772	2,000	54,000	16,000	14,000	66,000	100,000	0,800	0,771	0,794	0,805	0,783		
	0,00001	LeNet_ours	0,320	0,902	0,442	0,770	1,000	65,000	15,000	26,000	44,000	100,000	0,727	0,813	0,714	0,746	0,760		
	0,000005	LeNet_ours	Poor graph curves										#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
	0,000008	LeNet_ours	0,155	0,960	0,502	0,762	2,000	52,000	18,000	12,000	68,000	300,000	0,800	0,743	0,813	0,791	0,776		
	0,000008	LeNet_ours	0,332	0,882	0,430	0,774	2,000	51,000	19,000	22,000	58,000	100,000	0,727	0,729	0,699	0,753	0,713		
	SGD												#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
	0,001	LeNet_ours	0,480	0,832	0,493	0,740	2,000	38,000	39,000	10,000	63,000	100,000	0,673	0,494	0,792	0,618	0,608		
	0,001	HACNN	0,056	0,985	0,888	0,716	2,000	69,000	8,000	25,000	48,000	100,000	0,780	0,896	0,734	0,857	0,807		
	0,001	HACNN	0,189	0,950	0,520	0,817	2,000	72,000	5,000	18,000	55,000	300,000	0,847	0,935	0,800	0,917	0,862		
	0,001	VGG	0,241	0,905	0,852		2,000	62,000	15,000	40,000	33,000	100,000	0,633	0,805	0,608	0,688	0,693		
	Batch size																		
lr=0,00005	32	HACNN	0,082	0,972	0,570	0,848	5,000	65,000	5,000	14,000	66,000	100,000	0,873	0,929	0,823	0,930	0,872		
lr=0,00005	128	HACNN	0,334	0,853	0,375	0,834	4,000	55,000	15,000	16,000	64,000	100,000	0,793	0,786	0,775	0,810	0,780		
lr=0,000007	32	VGG_our	0,264	0,906	0,383	0,813	8,000	56,000	14,000	22,000	58,000	100,000	0,760	0,800	0,718	0,806	0,757		
lr=0,000007	128	VGG_our	0,351	0,858	0,412	0,798	13,000	59,000	11,000	26,000	54,000	100,000	0,753	0,843	0,694	0,831	0,761		
lr=0,000007	32	VGG_theirs	0,166	0,941	0,428	0,821	14,000	66,000	4,000	18,000	62,000	100,000	0,853	0,943	0,786	0,939	0,857		
lr=0,000007	128	VGG_theirs	0,372	0,834	0,377	0,830	13,000	60,000	10,000	24,000	56,000	100,000	0,773	0,857	0,714	0,848	0,779		
lr=0,000001	128	VGG_our	0,410	0,831	0,428	0,787	7,000	49,000	21,000	24,000	56,000	300,000	0,700	0,700	0,671	0,727	0,685		
lr=0,000001	32	VGG_our	0,369	0,849	0,427	0,801	8,000	48,000	22,000	19,000	61,000	300,000	0,727	0,686	0,716	0,735	0,701		
	0,000008	64	LeNet ours	0,155	0,960	0,502	0,762	2,000	52,000	18,000	12,000	68,000	300,000	0,800	0,742	0,812	0,790	0,776	
	0,000008	32	LeNet ours	0,080	0,979	0,570	0,772	3,000	55,000	15,000	13,000	67,000	300,000	0,810	0,785	0,808	0,817	0,797	
	0,000008	128	LeNet ours	0,205	0,940	0,477	0,780	2,000	55,000	15,000	14,000	66,000	300,000	0,800	0,780	0,797	0,814	0,791	
	Image size												#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
lr=0,000007	256	VGG_our	0,158	0,955	0,482	0,792	23,000	61,000	15,000	17,000	57,000	100,000	0,787	0,803	0,782	0,792	0,792		
													#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
													#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
													#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
	Activation function												#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
lr=0,000007	LeakyRelu	VGG_our	0,3285	0,8623	0,4315	0,7798	8	45	25	19	61	100	0,707	0,643	0,703	0,709	0,672		
lr=0,000007	Swish	VGG_our	0,4633	0,7626	0,5181	0,73	9	48	22	26	54	100	0,680	0,686	0,649	0,711	0,667		
lr=0,000007	PReLU	VGG_our	0,294	0,8874	0,389	0,8205	10	63	7	25	55	100	0,787	0,900	0,716	0,887	0,797		
lr=0,000007	ELU	VGG_our	0,2378	0,9072	0,4847	0,7677	7	45	25	13	67	100	0,747	0,643	0,776	0,728	0,703		
lr=0,000007	MISH	VGG_our	0,4415	0,7785	0,5002	0,721	10	52	18	30	50	100	0,680	0,743	0,634	0,735	0,684		

lr=0,000007	LeakyRelu	VGG_theirs	0,3095	0,863	0,3748	0,8356	15	70	0	65	15	100	0,567	1,000	0,519	1,000	0,683	
lr=0,000007	Swish	VGG_theirs	0,525	0,6895	0,5325	0,6742	17	34	36	15	65	100	0,660	0,486	0,694	0,644	0,571	
lr=0,000007	PReLU	VGG_theirs	0,316	0,8577	0,3978	0,8235	18	52	18	12	68	100	0,800	0,743	0,813	0,791	0,776	
lr=0,000007	ELU	VGG_theirs	0,0276	0,9992	0,6276	0,825	15	58	12	13	67	100	0,833	0,829	0,817	0,848	0,823	
0,000008	LeakyRelu	LeNet ours, 32	0,09	0,98	0,608	0,749	3	50	20	13	67	300	0,780	0,714	0,794	0,770	0,752	
0,000008	Swish	LeNet ours, 32	0,23	0,925	0,468	0,767	3	53	17	19	61	300	0,760	0,757	0,736	0,782	0,746	
0,000008	PReLU	LeNet ours, 32	0,078	0,984	0,62	0,758	4	53	17	18	62	300	0,767	0,757	0,746	0,785	0,752	
0,000008	ELU	LeNet ours, 32	0,07	0,98	0,66	0,752	3	52	18	16	64	300	0,773	0,743	0,765	0,780	0,754	
0,000008	ReLU	LeNet ours,32	0,080	0,979	0,570	0,772	3,000	55,000	15,000	13,000	67,000	300,000	0,813	0,786	0,809	0,817	0,797	
lr=0,00005	Elu	HACNN, 32	0,0038	1	1,1795	0,7738	5	48	22	18	62	100	0,733	0,686	0,727	0,738	0,706	
lr=0,00005	Elu	HACNN, 64	0,0379	0,9893	0,7838	0,8024	4	55	15	12	68	100	0,820	0,786	0,821	0,819	0,803	
lr=0,00005	LeakyRelu	HACNN, 32	0,1223	0,9482	0,6103	0,8281	5	64	6	18	62	100	0,840	0,914	0,780	0,912	0,842	
lr=0,00005	LeakyRelu	HACNN, 64	0,2371	0,9003	0,4364	0,822	4	58	21	15	65	100	0,774	0,734	0,795	0,756	0,763	
lr=0,00005	swish	HACNN, 64	0,4546	0,7793	0,4658	0,7511	5	67	3	56	24	100	0,607	0,957	0,545	0,889	0,694	
lr=0,00005	swish	HACNN, 32	0,4191	0,7922	0,483	0,7738	6	48	22	29	51	100	0,660	0,686	0,623	0,699	0,653	
lr=0,00005	PReLU	HACNN, 32	0,0128	0,9977	1,783	0,7828	7	52	18	19	61	100	0,753	0,743	0,732	0,772	0,738	
lr=0,00005	PReLU	HACNN, 64	0,1279	0,9521	0,6226	0,8145	5	56	24	11	59	100	0,767	0,700	0,836	0,711	0,762	
													#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	