



Model Development Phase Template

Date	9 July 2024
Team ID	SWTID1719992739
Project Title	Visual Diagnostics: Detecting Tomato Plant Diseases through Leaf Image Analysis
Maximum Marks	10 Marks

Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include a summary and training and validation performance metrics for multiple models, presented through respective screenshots.

Initial Model Training Code (5 marks):

Paste the screenshot of the model training code

Model Validation and Evaluation Report (5 marks):

Model		Sum	ıma	ry	Training and Validation Performance Metrics				
	model.summary() ✓ 18s Model: "model"				Opoch 1/15				
	Layer (type)	Output Shape	Param #	Connected to	Epoch 3/15 125/125 [
	imput_1 (InputLayer)	[(None, 256, 256, 3)]			Epoch 4/15 125/125 [
	conv1_pad (ZeroPadding2D)				Epoch 5/15				
	conv1_conv (Conv20)	(None, 128, 128, 64)		['conv1_pad[0][0]']	125/125 [=======] - 281s 2s/step - loss: 0.0710 - accuracy: 0.9772 - val_loss: 0.1339 - val_accuracy: 0.9570 Epoch 6/15				
ResNet152V2	pool1 pad (ZeroPadding2D)	(None, 130, 130, 64)		['conv1 conv[0][0]']	125/125 [
	pools pool (MaxPooling2D)	(None 64 64 64)		['pool1 pad[0][0]']	125/125 [
	, , , , , , , , , , , , , , , , , , , ,				125/125 [====================================				
	conv2_block1_preact_bn (Ba tchNormalization)	(None, 64, 64, 64)		[,bcol1_bcol[6][6],]	Epoch 9/15 125/125 [
	conv2_block1_preact_relu ((None, 64, 64, 64)		['conv2_block1_preact_bn[0][0]	Epoch 10/15 125/125 [
	Activation)				Epoch 11/15				
	conv2_block1_1_conv (Conv2 D)	(None, 64, 64, 64)		['conv2_block1_preact_relu[0][0]']	125/125 [===========] - 280s 2s/step - loss: 0.0262 - accuracy: 0.9926 - val_loss: 0.0862 - val_accuracy: 0.9680 Epoch 12/15				
	1 T				125/125 [
	conv2_block1_1_bn (BatchNo rmalization)	(None, 64, 64, 64)		['conv2_block1_1_conv[0][0]']	···				
	 Total params: 60390658 (230	.37 HB)			Epoch 14/15 125/125 [
	Trainable params: 56430338 Non-trainable params: 39603				Epoch 15/15 125/125 [





	O plock_M_respon_relor (fett) (fone, 8	K. E. 201) 1	, bases_10_erome_6	N(IIII)	Epoch 1/15 125/125 [==] - 3344s 27s/ste	p - loss: 1.0480	0 - accuracy: 0.692	1 - val_loss: 1.98	7 - val_accuracy: 0.363
Mobilenetv2	Silver M. Lead and the Chapter Classes, I	1, 1, 110) 1741	(Mirk) to reserve	w[u[#][d)*1	Epoch 2/15 125/125 [==] - 199s 2s/step	- loss: 0.3696	- accuracy: 0.8841	- val_loss: 2.0685	- val_accuracy: 0.3960
	(Model 25 destroine SM (Est. (Nove, 6		"Whick to dealwin		Epoch 3/15 125/125 [] - 201s 2s/step	- loss: 0.2467 -	- accuracy: 0.9172	- val_loss: 1.6760	- val_accuracy: 0.5010
	of the medical long				Epoch 4/15 125/125 [] - 200s 2s/step	- loss: 0.1859 -	- accuracy: 0.9394	- val_loss: 1.6982	- val_accuracy: 0.5160
	black_Mi_fortwice_rels (R. (Nove, R s.M)	k, 8, 192) 8	"Block LE dormedo	K BIT H.	Epoch 5/15 125/125 [************************************	=n] - 201s 2s/step	- loss: 0.1516 -	- accuracy: 0.9512	- val_loss: 1.2407	- val_accuracy: 0.6200
	block_M_project (Condity (Nove, A	L L 100) 107200	Chick_CLaumen	re_rr_1(0_10	Epoch 6/15 125/125 [] - 201s 2s/step	- loss: 0.1283 -	- accuracy: 0.9588	- val_loss: 1.0170	- val_accuracy: 0.6790
	than it project in them. (and, a named test on)	L (198) 1286	(Madjajeje)	4(4)	Epoch 7/15 125/125 [] - 204s 2s/step	- loss: 0.1083 -	- accuracy: 0.9646	- val_loss: 0.8886	- val_accuracy: 0.7520
	000:1 (12m20) (10m, 6	i, i, 28) 4898	Phiet is project	779003	Epoch 8/15 125/125 [] - 199s 2s/step	- loss: 0.1021 -	- accuracy: 0.9654	- val_loss: 0.6648	- val_accuracy: 0.7980
	Conc_l_br (EstaMormodiant (Nove, 6 Lon)	5, 8, 1285) \$128	[.cos=:f0]f0],I		Epoch 9/15 125/125 [mal - 288s 2s/sten	- loss: 0.0352 -	- accuracy: 0.9888	- val loss: 0.0707	- val accuracy: 0.9800
		I, F, 1240) B	[,tea-]=n[4][9],]		tpoch 10/15 125/125 [
	global_serrage_conlingity (time, i	(30)	[,465]46[4],[Epoch 11/15 125/125 [
	denor_A (Gree) (Some, d	1800) (27)/09	[[8]]] [2](2], provide to	oc.17q24_2(8	Epoch 12/15 125/125 [Constitution (Constitution)	
	dens_1 (tess) (tess,)	180.0	["0000_0[1][0]"]		tpoch 13/15 125/125 [
	total parate: datase (11.54 FE) trainable parate: IESFCE (11.81 MC)				Epoch 14/15 125/125 [
	Similar trained to second 1981 (1.4 M	8			Epoch 15/15 125/125 [
	comp block) 3 pag (Tarcha	(None, 18, 18, 512)		['coms_blockl_t_relu[8] 8 ']	Epoch 1/15 125/125 [] - 2918s 23s/ste	p - loss; 0,8585	S - accuracy; 0.776	3 - val_loss: 0.453	3 - val_accuracy: 0.838
	comf_blockl_2_pa8 (ZerePa dtleg2b) comf_blockl_2_com (Com/			['coms_blockd_t_resu(e)[6]'] ['coms_blockd_t_resu(e)[8]']	175/125 [
	comS_block3_2_com/ (Com/2 0)	(Nano, 8, 8, 512)	2359295	['com5_block3_1_pat(e)(8)']	125/125 [- Epoch 2/15 125/125 [- Epoch 3/15 125/125 [] - ZZ9s Zs/step	- loss: 0.2156 -	- accuracy: 0.9448 -	- val_loss: 0.1920	- val_accuracy: 8.9458
	comS_blockS_2_comv (Comv2 B) comS_blockS_2_bm (BotchNo- malization)	(None, 8, 8, 512)		[.com2[plock3]3 com(6)[a].)	175/125 [] - 229s Zs/step] - 230s Zs/step -	- loss: 0.2156 -	- accuracy: 0.9448 -	- val_loss: 0.1920 - val_loss: 0.1365	- val_accuracy: 8.9458 - val_accuracy: 8.9598
	dding20) coms_block3_2_com/ (Com/2 0) coms_block3_2 tm (Satchio	(None, 8, 8, 512)	2359295	['com5_block3_1_pat(e)(8)']	125/125 [- Epoch 2/15 125/125 [- Epoch 3/15 125/125 [- Epoch 3/15 125/125 [- Epoch 4/15 125/125 [- Epoch 4/15] - 229s Zs/step] - 230s Zs/step] - 230s Zs/step -	- loss: 0.2156 - - loss: 0.1234 - - loss: 0.0841 -	- accuracy: 0.9448 - - accuracy: 0.9656 - - accuracy: 0.9767 -	- val_loss: 0.1920 - val_loss: 0.1365 - val_loss: 0.1002	- val_accuracy: 8.9458 - val_accuracy: 8.9598
	dziegżó) comis_blockd_i_com/ (Cam/2 0) comis_blockd_i_bm (Botchio- mailization) comis_blockd_i_relu (Activ	(None, 8, 8, 512) (None, 8, 8, 512) (None, 8, 8, 512)	2359209 2648	[.com2[plock3]3 com(6)[a].)	125/135 [- Epoch 2/15 125/125 [- Epoch 3/15 125/125 [- Epoch 3/15 125/125 [- Epoch 3/15 125/125 [- Epoch 3/15 125/125 [-] - 229s 2s/step] - 230s 2s/step] - 230s 2s/step] - 228s 2s/step	- loss: 0.2156 - - loss: 0.1234 - - loss: 0.0041 - - loss: 0.0712 -	- accuracy: 0.9440 - accuracy: 0.9650 - accuracy: 0.9767 - accuracy: 0.9882 -	- val_loss: 0.1920 - val_loss: 0.1365 - val_loss: 0.1002 - val_loss: 0.1007	- val_accuracy: 8.9458 - val_accuracy: 8.9598 - val_accuracy: 8.9648 - val_accuracy: 8.9788
	ddleg20) come_blockd_l_come (Come2 0) comes_blockd_l_im (astoble mailistion) comes_blockd_l_relu (Activ atten)	(None, 8, 8, 512) (None, 8, 8, 512) (None, 8, 8, 512) (None, 8, 8, 512) (None, 8, 8, 2848)	2259296 2648 9	['comf_block3_1_par(6)[9]'] ['comf_block3_1_com(6)[9]'] ['comf_block3_1_bn(9)[6]'] ['comf_block3_1_bn(9)[6]'] ['comf_block3_1_tralu(9)[9]']	12//15 [] - 2295 Zs/step] - 2305 Zs/step] - 2305 Zs/step] - 2285 Zs/step] - 2285 Zs/step] - 2305 Zs/step	- loss: 0.1234 loss: 0.0841 loss: 0.0712 loss: 0.0507 loss: 0.0459 -	- accuracy: 8.9448 accuracy: 8.9656 accuracy: 8.9867 accuracy: 8.9889 accuracy: 8.9839 -	- val_loss: 0.1920 - val_loss: 0.1365 - val_loss: 0.1002 - val_loss: 0.1007 - val_loss: 0.0703 - val_loss: 0.0703	- val_accuracy: 8,9458 - val_accuracy: 8,9598 - val_accuracy: 8,9648 - val_accuracy: 8,9788 - val_accuracy: 8,9718 - val_accuracy: 8,9728
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