



## Model Development Phase

Date	4 july 2025
Team ID	SWTID1750170729
Project Title	Deepfruitveg: Automated Fruit And Veg Identification
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

		Training and Validation Performance  Metrics
Model	Summary	

Model Validation and Evaluation Report (5 marks):





## Model 1

Train DataFrame columns: Index(['filename', 'class'], dtype='object')

(filename (lass'), dtype='object')

(fortent/merged/merged/train/galangal/aug\_0\_20... galangal

/content/merged/merged/train/galangal/aug\_0\_20...

/content/merged/merged/train/galangal/aug\_0\_19...

/content/merged/merged/train/galangal/aug\_0\_19...

/content/merged/merged/train/galangal/aug\_0\_46...

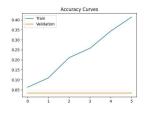
/content/merged/merged/train/galangal/aug\_0

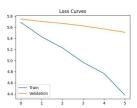
Layer (type)	Output Shape	Param #	Connected to
input_layer_1 (InputLayer)	(None, 160, 160, 3)	0	(F)
rescaling_2 (Rescaling)	(None, 160, 160, 3)	0	input_layer_1[0]
normalization_1 (Normalization)	(None, 160, 160, 3)	7	rescaling_2[0][0]
rescaling_3 (Rescaling)	(None, 160, 160, 3)	0	normalization_1[
stem_conv_pad (ZeroPadding2D)	(None, 161, 161, 3)	0	rescaling_3[0][0]
stem_conv (Conv2D)	(None, 80, 80, 40)	1,080	stem_conv_pad[0]
stem_bn (BatchNormalizatio	(None, 80, 80, 40)	160	stem_conv[0][0]
stem_activation (Activation)	(None, 80, 80, 40)	0	stem_bn[0][0]
block1a_dwconv (DepthwiseConv2D)	(None, 80, 80, 40)	360	stem_activation[_
block1a_bn (BatchNormalizatio	(None, 80, 80, 40)	160	block1a_dwconv[0
block1a_activation (Activation)	(None, 80, 80, 40)	0	block1a_bn[0][0]

20 Acad 40% utilized lamp filterions beinging to 30 Communication (Communication of the Communication of the Commu

(kesnape)	2304)		
block7b_se_reduce (Conv2D)	(None, 1, 1, 96)	221,280	block7b_se_resha.
block7b_se_expand (Conv2D)	(None, 1, 1, 2304)	223,488	block7b_se_reduc.
block7b_se_excite (Multiply)	(None, 5, 5, 2304)	0	block7b_activati. block7b_se_expan.
block7b_project_co (Conv2D)	(None, 5, 5, 384)	884,736	block7b_se_excit.
block7b_project_bn (BatchNormalizatio	(None, 5, 5, 384)	1,536	block7b_project
block7b_drop (Dropout)	(None, 5, 5, 384)	0	block7b_project
block7b_add (Add)	(None, 5, 5, 384)	0	block7b_drop[0][. block7a_project
top_conv (Conv2D)	(None, 5, 5, 1536)	589,824	block7b_add[0][0]
top_bn (BatchNormalizatio	(None, 5, 5, 1536)	6,144	top_conv[0][0]
top_activation (Activation)	(None, 5, 5, 1536)	0	top_bn[0][0]
avg_pool (GlobalAveragePool	(None, 1536)	0	top_activation[0.
dense_2 (Dense)	(None, 128)	196,736	avg_pool[0][0]
dropout_1 (Dropout)	(None, 128)	0	dense_2[0][0]
dense 3 (Dense)	(None, 30)	3,870	dropout 1[0][0]

Total params: 10,984,141 (41.90 MB)
Trainable params: 10,896,838 (41.57 MB)
Non-trainable params: 87,303 (341.03 KB)









## Model 2

Mounted at /content/drive

Extracted!

Found 4594 images belonging to 30 classes.
Found 450 images belonging to 30 classes.
Downloading data from https://storage.goog.
43941319/43941396 es

Layer (type)	Output Shape	Param #	Connected to
input_layer (Inputlayer)	(None, 300, 300, 3)	0	2
rescaling (Rescaling)	(lione, 100, 300, 3)	9	input_layer[0][0]
normalization (Normalization)	(None, 300, 300, 3)	7	rescaling[0][0]
rescaling_1 (Rescaling)	(tone, 300, 300, 3)	9	normalization[0].
stem_conv_pad (ZornPadding2D)	(None, 381, 381, 3)	0	rescaling_1[8][8]
stem_conv (Conv2D)	(time, 150, 150, 40)	1,080	stem_conv_pad[8].
stem_bn (BatchMormalizatio.	(None, 150, 150, 40)	260	stem_conv[0][0]
stem_activation (Activation)	(None, 150, 150,	9	stem_bn[0][0]
hlock1a_deconv (DepthwiseConv20)	(None, 150, 150, 48)	360	stom_activation[.

© 100 Color Security of A Control Color Security (1 Security Color Security Colo

block7b\_se\_reduce (None, 1, 1, 96) 221,280 block7b\_se\_resha... block7b\_se\_reduc... block7b\_se\_expand (Conv2D) 223,488 (None, 1, 1, 2304) (None, 10, 10, 2304) block7b\_se\_excite (Multiply) block7b\_activati... block7b\_se\_expan... (None, 10, 10, 384) block7b\_project\_co...
(Conv2D) 884,736 block7b\_se\_excit... (None, 10, 10, 384) block7b\_project\_... block7b\_project\_bn (BatchNormalizatio... (None, 10, 10, 384) block7b\_project\_... block7b\_drop (Dropout) (None, 10, 10, 384) (None, 10, 10, 1536) top\_conv (Conv2D) block7b\_add[0][0] (None, 10, 10, 1536) top\_bn (BatchNormalizatio... top\_activation (Activation) (None, 10, 10, 1536) top\_bn[0][0] (None, 1536) top\_activation[0... dense (Dense) avg\_pool[0][0]

> dense\_1 (Dense) (None, 30) Total params: 11,184,717 (42.67 MB)
> Trainable params: 11,097,414 (42.33 MB)
> Non-trainable params: 87,303 (341.03 KB)

7,710 dropout[0][0]

dropout (Dropout) (None, 256)

