

Project Development Phase

Model Performance Test

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| Date | 03 November 2022 |
| Team ID | PNT2022TMID44408 |
| Project Name | INTELLIGENT VEHICLE DAMAGE ASSESSMENT AND COST ESTIMATOR FOR INSURANCE COMPANIES |
| Maximum Marks | 4 Marks |

Model Performance Testing

Project team shall fill the following information in model performance testing template.

| S.NO. | PARAMETER | VALUES | SCREENSHOT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|-----------------------|---------|---|--------------|--------------|---------|-------|--|--|----------------------|-----------------------|---|-----------------------|----------------------|------|-----------------------|----------------------|-------|----------------------------|----------------------|---|-----------------------|-----------------------|-------|-----------------------|-----------------------|--------|----------------------------|---------------------|---|-----------------------|---------------------|--------|-----------------------|---------------------|--------|-----------------------|---------------------|--------|----------------------------|---------------------|---|-----------------------|---------------------|---------|-----------------------|---------------------|---------|-----------------------|---------------------|---------|----------------------------|---------------------|---|-----------------------|---------------------|---------|-----------------------|---------------------|---------|-----------------------|---------------------|---------|----------------------------|-------------------|---|-------------------|---------------|---|---------------|-----------|-------|
| 1. | Model Summary | | <div><div>+ Code+ Text</div><div>▼ 5. Creating A Model Object</div><pre>model = Model(inputs=vgg16.input, outputs=prediction) model.summary()</pre><div>Model: "model"</div><table><thead><tr><th>Layer (type)</th><th>Output Shape</th><th>Param #</th></tr></thead><tbody><tr><td colspan="3">=====</td></tr><tr><td>input_1 (InputLayer)</td><td>[(None, 224, 224, 3)]</td><td>0</td></tr><tr><td>block1_conv1 (Conv2D)</td><td>(None, 224, 224, 64)</td><td>1792</td></tr><tr><td>block1_conv2 (Conv2D)</td><td>(None, 224, 224, 64)</td><td>36928</td></tr><tr><td>block1_pool (MaxPooling2D)</td><td>(None, 112, 112, 64)</td><td>0</td></tr><tr><td>block2_conv1 (Conv2D)</td><td>(None, 112, 112, 128)</td><td>73856</td></tr><tr><td>block2_conv2 (Conv2D)</td><td>(None, 112, 112, 128)</td><td>147584</td></tr><tr><td>block2_pool (MaxPooling2D)</td><td>(None, 56, 56, 128)</td><td>0</td></tr><tr><td>block3_conv1 (Conv2D)</td><td>(None, 56, 56, 256)</td><td>295168</td></tr><tr><td>block3_conv2 (Conv2D)</td><td>(None, 56, 56, 256)</td><td>590080</td></tr><tr><td>block3_conv3 (Conv2D)</td><td>(None, 56, 56, 256)</td><td>590080</td></tr><tr><td>block3_pool (MaxPooling2D)</td><td>(None, 28, 28, 256)</td><td>0</td></tr><tr><td>block4_conv1 (Conv2D)</td><td>(None, 28, 28, 512)</td><td>1180160</td></tr><tr><td>block4_conv2 (Conv2D)</td><td>(None, 28, 28, 512)</td><td>2359808</td></tr><tr><td>block4_conv3 (Conv2D)</td><td>(None, 28, 28, 512)</td><td>2359808</td></tr><tr><td>block4_pool (MaxPooling2D)</td><td>(None, 14, 14, 512)</td><td>0</td></tr><tr><td>block5_conv1 (Conv2D)</td><td>(None, 14, 14, 512)</td><td>2359808</td></tr><tr><td>block5_conv2 (Conv2D)</td><td>(None, 14, 14, 512)</td><td>2359808</td></tr><tr><td>block5_conv3 (Conv2D)</td><td>(None, 14, 14, 512)</td><td>2359808</td></tr><tr><td>block5_pool (MaxPooling2D)</td><td>(None, 7, 7, 512)</td><td>0</td></tr><tr><td>flatten (Flatten)</td><td>(None, 25088)</td><td>0</td></tr><tr><td>dense (Dense)</td><td>(None, 3)</td><td>75267</td></tr></tbody></table><div>=====</div><div>Total params: 14,789,955</div><div>Trainable params: 75,267</div></div> | Layer (type) | Output Shape | Param # | ===== | | | input_1 (InputLayer) | [(None, 224, 224, 3)] | 0 | block1_conv1 (Conv2D) | (None, 224, 224, 64) | 1792 | block1_conv2 (Conv2D) | (None, 224, 224, 64) | 36928 | block1_pool (MaxPooling2D) | (None, 112, 112, 64) | 0 | block2_conv1 (Conv2D) | (None, 112, 112, 128) | 73856 | block2_conv2 (Conv2D) | (None, 112, 112, 128) | 147584 | block2_pool (MaxPooling2D) | (None, 56, 56, 128) | 0 | block3_conv1 (Conv2D) | (None, 56, 56, 256) | 295168 | block3_conv2 (Conv2D) | (None, 56, 56, 256) | 590080 | block3_conv3 (Conv2D) | (None, 56, 56, 256) | 590080 | block3_pool (MaxPooling2D) | (None, 28, 28, 256) | 0 | block4_conv1 (Conv2D) | (None, 28, 28, 512) | 1180160 | block4_conv2 (Conv2D) | (None, 28, 28, 512) | 2359808 | block4_conv3 (Conv2D) | (None, 28, 28, 512) | 2359808 | block4_pool (MaxPooling2D) | (None, 14, 14, 512) | 0 | block5_conv1 (Conv2D) | (None, 14, 14, 512) | 2359808 | block5_conv2 (Conv2D) | (None, 14, 14, 512) | 2359808 | block5_conv3 (Conv2D) | (None, 14, 14, 512) | 2359808 | block5_pool (MaxPooling2D) | (None, 7, 7, 512) | 0 | flatten (Flatten) | (None, 25088) | 0 | dense (Dense) | (None, 3) | 75267 |
| Layer (type) | Output Shape | Param # | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| input_1 (InputLayer) | [(None, 224, 224, 3)] | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block1_conv1 (Conv2D) | (None, 224, 224, 64) | 1792 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block1_conv2 (Conv2D) | (None, 224, 224, 64) | 36928 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block1_pool (MaxPooling2D) | (None, 112, 112, 64) | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block2_conv1 (Conv2D) | (None, 112, 112, 128) | 73856 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block2_conv2 (Conv2D) | (None, 112, 112, 128) | 147584 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block2_pool (MaxPooling2D) | (None, 56, 56, 128) | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block3_conv1 (Conv2D) | (None, 56, 56, 256) | 295168 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block3_conv2 (Conv2D) | (None, 56, 56, 256) | 590080 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block3_conv3 (Conv2D) | (None, 56, 56, 256) | 590080 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block3_pool (MaxPooling2D) | (None, 28, 28, 256) | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block4_conv1 (Conv2D) | (None, 28, 28, 512) | 1180160 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block4_conv2 (Conv2D) | (None, 28, 28, 512) | 2359808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block4_conv3 (Conv2D) | (None, 28, 28, 512) | 2359808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block4_pool (MaxPooling2D) | (None, 14, 14, 512) | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block5_conv1 (Conv2D) | (None, 14, 14, 512) | 2359808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block5_conv2 (Conv2D) | (None, 14, 14, 512) | 2359808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block5_conv3 (Conv2D) | (None, 14, 14, 512) | 2359808 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| block5_pool (MaxPooling2D) | (None, 7, 7, 512) | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| flatten (Flatten) | (None, 25088) | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| dense (Dense) | (None, 3) | 75267 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| 2. | Accuracy | <p>Training Accuracy</p> <p>- 97.51%</p> <p>Validation Accuracy</p> <p>- 70.42%</p> | <pre> training_set, validation_data=test_set, epochs=25, steps_per_epoch=len(training_set), validation_steps=len(test_set)) </pre> <p>/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:6: UserWarning: 'Model.'</p> <p>Epoch 1/25 98/98 [=====] - 560s 6s/step - loss: 1.2275 - accuracy: 0.51 Epoch 2/25 98/98 [=====] - 584s 6s/step - loss: 0.7810 - accuracy: 0.71 Epoch 3/25 98/98 [=====] - 538s 5s/step - loss: 0.4842 - accuracy: 0.81 Epoch 4/25 98/98 [=====] - 537s 5s/step - loss: 0.3813 - accuracy: 0.81 Epoch 5/25 98/98 [=====] - 537s 5s/step - loss: 0.2735 - accuracy: 0.81 Epoch 6/25 98/98 [=====] - 538s 5s/step - loss: 0.2211 - accuracy: 0.91 Epoch 7/25 98/98 [=====] - 536s 5s/step - loss: 0.2163 - accuracy: 0.91 Epoch 8/25 98/98 [=====] - 538s 6s/step - loss: 0.1728 - accuracy: 0.91 Epoch 9/25 98/98 [=====] - 540s 6s/step - loss: 0.1423 - accuracy: 0.91 Epoch 10/25 98/98 [=====] - 539s 6s/step - loss: 0.1118 - accuracy: 0.91 Epoch 11/25 98/98 [=====] - 538s 5s/step - loss: 0.0808 - accuracy: 0.91 Epoch 12/25 98/98 [=====] - 549s 6s/step - loss: 0.0751 - accuracy: 0.91 Epoch 13/25 98/98 [=====] - 555s 6s/step - loss: 0.0730 - accuracy: 0.91 Epoch 14/25 98/98 [=====] - 535s 5s/step - loss: 0.1074 - accuracy: 0.91 Epoch 15/25 98/98 [=====] - 539s 6s/step - loss: 0.0598 - accuracy: 0.91 Epoch 16/25 98/98 [=====] - 543s 6s/step - loss: 0.0810 - accuracy: 0.91 Epoch 17/25 98/98 [=====] - 541s 6s/step - loss: 0.1196 - accuracy: 0.91 Epoch 18/25 98/98 [=====] - 543s 6s/step - loss: 0.0915 - accuracy: 0.91 Epoch 19/25 98/98 [=====] - 544s 6s/step - loss: 0.0687 - accuracy: 0.91 Epoch 20/25 98/98 [=====] - 546s 6s/step - loss: 0.0492 - accuracy: 0.91 Epoch 21/25 98/98 [=====] - 543s 6s/step - loss: 0.0674 - accuracy: 0.91 Epoch 22/25 98/98 [=====] - 537s 5s/step - loss: 0.0740 - accuracy: 0.91 Epoch 23/25 98/98 [=====] - 538s 6s/step - loss: 0.0822 - accuracy: 0.91 Epoch 24/25 98/98 [=====] - 541s 6s/step - loss: 0.1048 - accuracy: 0.91 Epoch 25/25 98/98 [=====] - 544s 6s/step - loss: 0.1373 - accuracy: 0.91</p> |
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