

Capstone Project Weekly Progress Report

Semester	Fall-2024 Semester 3rd
Course Code	AML-3406
Section	Section 1
Project Title	Car Damage Detection
Group Name	Group B
Student names/Student IDs	Sakshi (C0908000) Bansil Patel (C0912873) Harsh Mohile (C0912872) Meet Patel (C0910378) – TL Rachit Bhatt (C0902810)
Reporting Week	Week 4
Faculty Supervisor	William Pourmajidi

- Grade the level of collaboration from different aspects between team members:
(use: good, medium, below expectation)

Sakshi	Bansil Patel	Harsh Mohile	Meet Patel	Rachit Bhatt
Good	Good	Good	Good	Good

2. Tasks outlined in the previous Weekly Progress Report for this reporting week at the individual level and group level**2.1 Individual tasks (each team member)**

Sakshi: Learning VS Code + Learning GitHub.

Bansil Patel & Meet Patel: Learning VS Code + Exploring Dataset.

Harsh Mohile & Rachit Bhatt: Learning VS Code + Creating Branches for automation and deployment, and over Git Management.

2.2 Your team's tasks

- Adapting VS-Code as IDE for development and version control.
- GitHub Management.
- Exploring Dataset.

3. Progress made in Reporting Week at an individual level and group level**3.1 Individual progress**

Sakshi: Understood basics of VS-Code Extensions and GitHub.

Bansil Patel:

Harsh Mohile: Worked on the **quality-assurance** branch for applying test automation.

Meet Patel:

Rachit Bhatt: Worked on the **production** branch for launching the tested piece of solution to the cloud.

3.2 Your team's progress

- GitHub Management for Deployment and Test-Automation.
-

4. The areas/tasks you could not make progress and/or complete as scheduled or the difficulties encountered in this reporting week at individual level and group level.**4.1 Individual project blockers**

Sakshi: N/A

Bansil Patel: N/A

Harsh Mohile: N/A

Meet Patel: N/A

Rachit Bhatt: N/A

4.2 Your team's project blockers

- Since the tasks of this scrum were quite smooth, 🎉 luckily; there were no blockers in this week.

5. Tasks to be completed in next week at individual level and group level

5.1 Individual tasks

Sakshi: Research on CI/CD Pipelining for ML-Ops.

Bansil Patel & Meet Patel: Applying various models initially on the dataset.

Harsh Mohile & Rachit Bhatt: Research on Docker for Deployment.

5.2 Your team's tasks

- Exploring and understanding the dataset.
- Research on Docker for Deployment.

6. Include the tasks from your sprint planning (Github/Zenhub) for the present period.



Figure 1: Status Chart of GitHub Issues in Milestone

7. **Include charts/graphs (e.g., burn down charts) from your project management tool (Github/Zenhub) that shows your progress for the period of this report.**

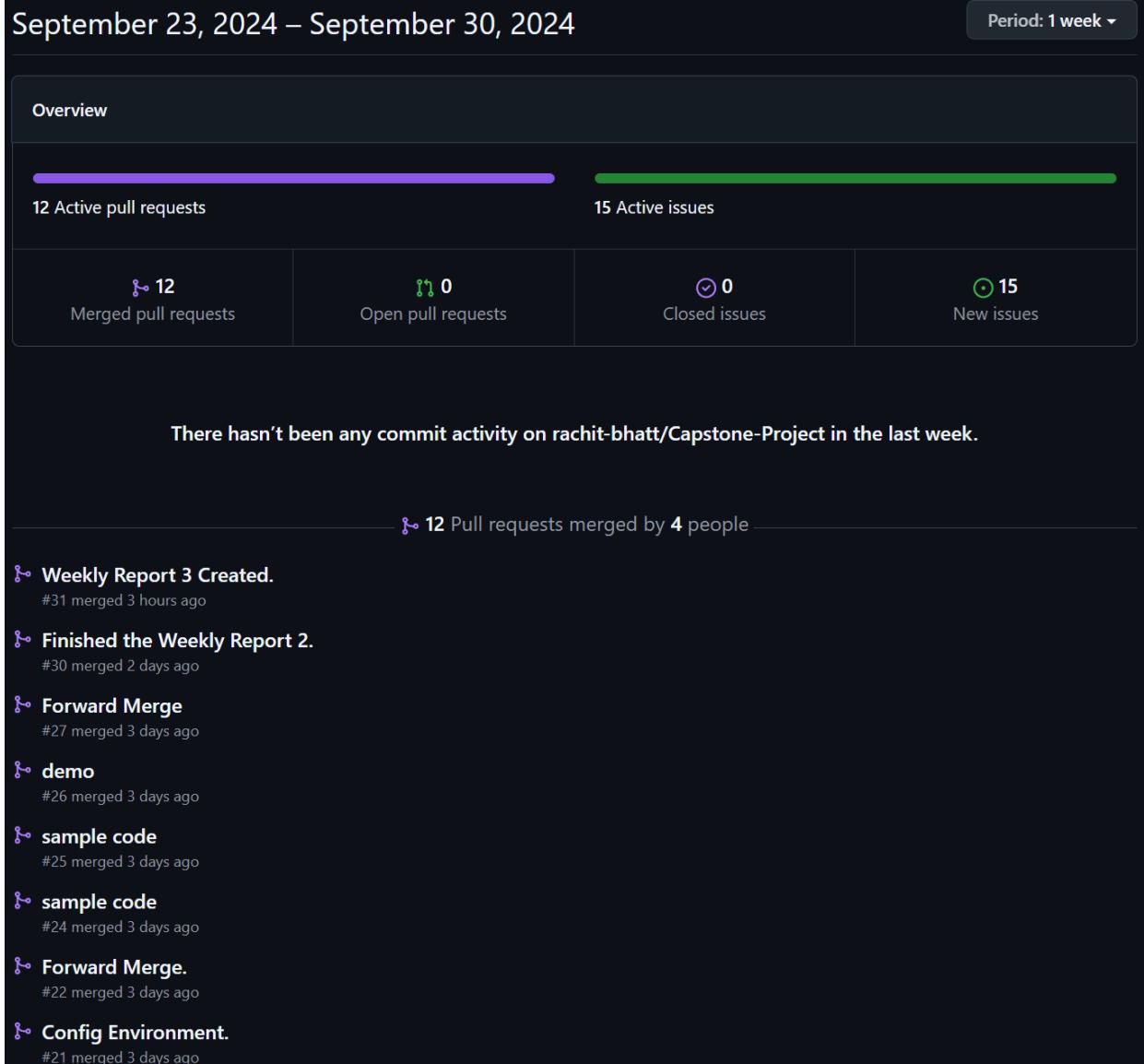


Figure 2: Contributors in the Week

8. Include a note and address to your project Github with list of codes uploaded/updated on Github in this reporting week.

GitHub: <https://www.github.com/rachit-bhatt/Capstone-Project>

```

1 epochs=5
2
3 # Train the model
4 history_eff = model_eff.fit(
5     train_ds,
6     epochs=epochs,
7     validation_data=valid_ds,
8     verbose=1,
9 )
10
11 # Save training and validation histories for later analysis
12 all_train_histories = [history_eff.history['accuracy']]
13 all_val_histories = [history_eff.history['val_accuracy']]

Epoch 1/5
35/35    188s 5s/step - AUC: 0.6027 - accuracy: 0.3963 - f1_score: 0.1340 - loss: 10.3684 - val_AUC: 0.5114 - val_accuracy: 0.3745 - val_f1_score: 0.3554 - val_loss: 396.7017
Epoch 2/5
35/35    250s 7s/step - AUC: 0.5140 - accuracy: 0.3471 - f1_score: 0.0000e+00 - loss: 5.8994 - val_AUC: 0.4966 - val_accuracy: 0.3636 - val_f1_score: 0.2646 - val_loss: 52.6579
Epoch 3/5
35/35    209s 6s/step - AUC: 0.4978 - accuracy: 0.3455 - f1_score: 0.0000e+00 - loss: 5.2170 - val_AUC: 0.5377 - val_accuracy: 0.3818 - val_f1_score: 0.1321 - val_loss: 15.6876
Epoch 4/5
35/35    157s 4s/step - AUC: 0.5134 - accuracy: 0.3648 - f1_score: 0.0000e+00 - loss: 4.7851 - val_AUC: 0.5799 - val_accuracy: 0.3927 - val_f1_score: 0.0608 - val_loss: 8.3147
Epoch 5/5
35/35    159s 5s/step - AUC: 0.4948 - accuracy: 0.3574 - f1_score: 0.0000e+00 - loss: 4.4633 - val_AUC: 0.5314 - val_accuracy: 0.3236 - val_f1_score: 0.0583 - val_loss: 8.4688

```

Figure 3: Applying NN on a Sample Dataset

```

42 img_shape = (img_size[0], img_size[1], 3)
43
44 base_model = DenseNet169(include_top=False, weights="imagenet", input_shape=img_shape, pooling='max')
45 base_model.trainable = True
46 x = base_model.output
47 x = BatchNormalization(axis=-1, momentum=0.99, epsilon=0.001)(x)
48 x = Dense(256, kernel_regularizer=regularizers.l2(0.016),
49             activity_regularizer=regularizers.l1(0.006),
50             bias_regularizer=regularizers.l1(0.006), activation='relu')(x)
51 x = Dropout(rate=.4, seed=123)(x)
52 output = Dense(class_count, activation='softmax')(x)
53 model_eff = Model(inputs=base_model.input, outputs=output)
54 model_eff.compile(Adamax(learning_rate=lr), loss='categorical_crossentropy',
55                     metrics=['accuracy', 'AUC', F1Score()])
56
57 model_eff.summary()
58

```

Model: "functional"

Layer (type)	Output Shape	Param #	Connected to
input_layer (InputLayer)	(None, 224, 224, 3)	0	-
zero_padding2d (ZeroPadding2D)	(None, 230, 230, 3)	0	input_layer[0][0]
conv1_conv (Conv2D)	(None, 112, 112, 64)	9,408	zero_padding2d[0...]
conv1_bn (BatchNormalizatio...	(None, 112, 112, 64)	256	conv1_conv[0][0]

Figure 4: Model Evaluation Summary

```

48 |     |     | predict_and_display_image('uploaded_image.jpg', model_eff)
49
50 # Attach the function to the upload button
51 upload_btn.observe(on_upload_change, names='value')
52
53 # Display the upload button and output widget
54 display(upload_btn, output)
55

Could not render content for 'application/vnd.jupyter.widget-view+json'
{"model_id": "428ebbf54e264659a871ca536e14de18", "version_major": 2, "version_minor": 0}

Could not render content for 'application/vnd.jupyter.widget-view+json'
{"model_id": "4f7b00a88f9c4deb8036a8a75e08fa71", "version_major": 2, "version_minor": 0}

-----
AttributeError: Traceback (most recent call last)
File c:\Users\pbans\OneDrive\Desktop\CD2\.conda\lib\site-packages\ipywidgets\widgets\widget.py:773, in Widget._handle_msg(self, msg)
    771     if 'buffer_paths' in data:
    772         _put_buffers(state, data['buffer_paths'], msg['buffers'])
--> 773     self.set_state(state)
    775 # Handle a state request.
    776 elif method == 'request_state':

File c:\Users\pbans\OneDrive\Desktop\CD2\.conda\lib\site-packages\ipywidgets\widgets\widget.py:650, in Widget.set_state(self, sync_data)
    645         self._send(msg, buffers=echo_buffers)
    647 # The order of these context managers is important. Properties must
    648 # be locked when the hold_trait_notification context manager is
    649 # released and notifications are fired.
--> 650 with self._lock_property(**sync_data), self.hold_trait_notifications():
    651     for name in sync_data:
    652         if name in self.keys:

File c:\Users\pbans\OneDrive\Desktop\CD2\.conda\lib\contextlib.py:144, in _GeneratorContextManager.__exit__(self, typ, value, traceback)
    142 if typ is None:
    143     try:
--> 144         next(self.gen)
    145     except StopIteration:
    146         return False
...
    41     # Save the uploaded image to a temporary path
    42     with open('uploaded_image.jpg', 'wb') as f:
    43         f.write(file_info['content'])

AttributeError: 'tuple' object has no attribute 'items'
Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...

```

Figure 5: Exception – Progress Blocker