Smart Travel Recommendation and Tourism Support Mobile Based System

Group ID: 2023-308

Status Document II

Sri Lanka Institute of Information Technology
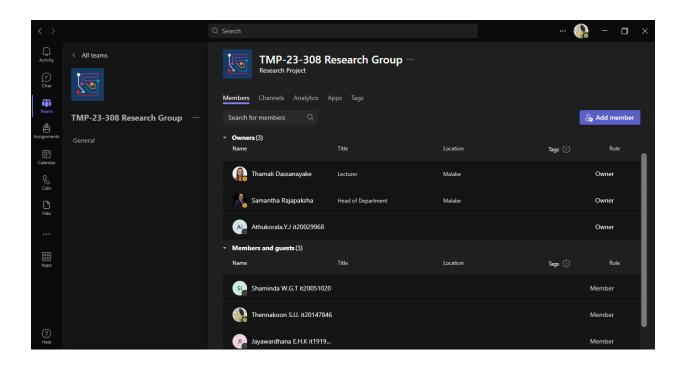
B.Sc. Honors Degree in Information Technology

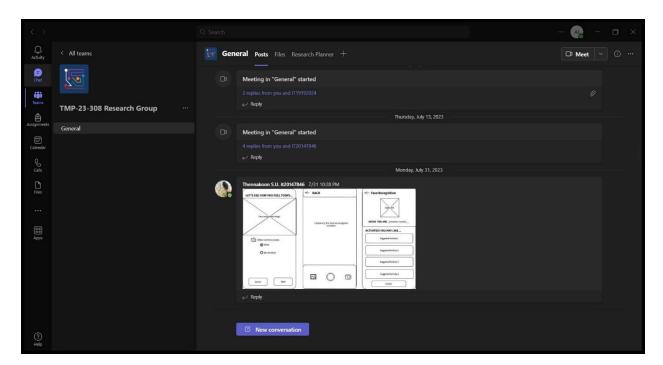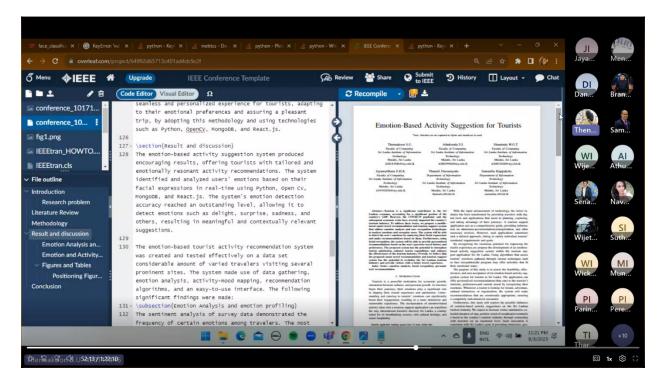Specialized in Information Technology

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Contents
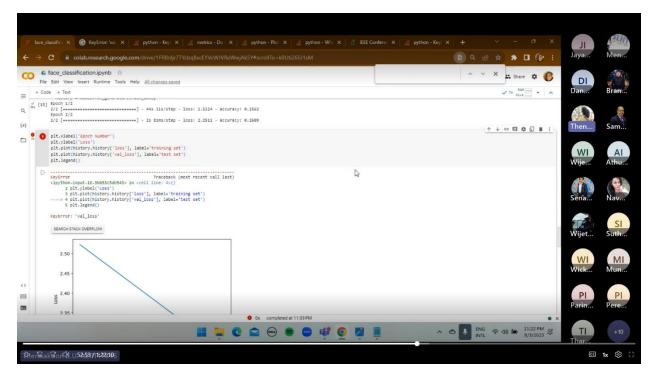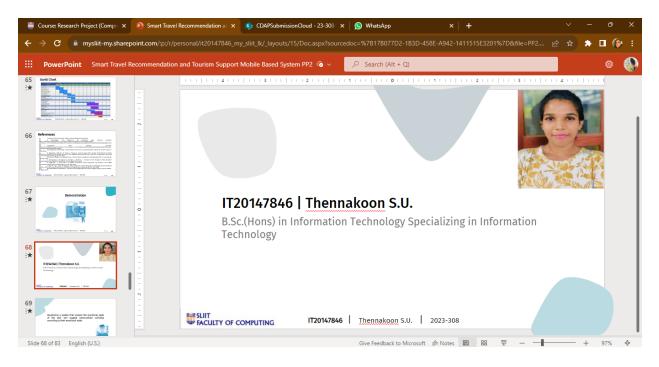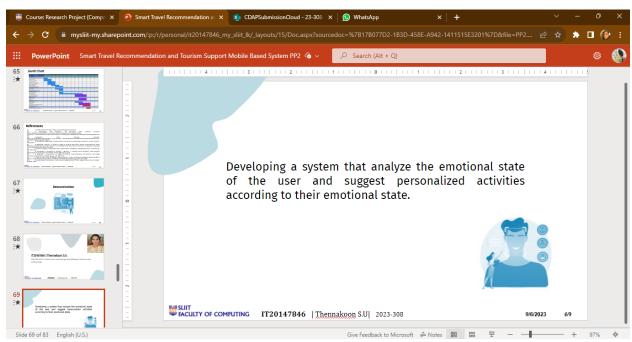
1 Microsoft Teams Group

- Meetings were held as much as possible to discuss issues that were occurred during implementation.
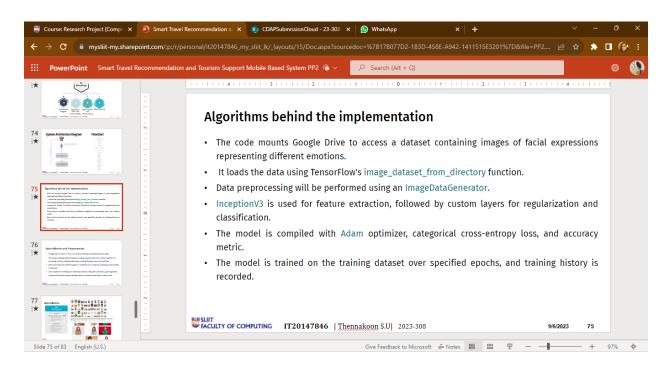- Present the progress of task have been done during the Co-supervisor meeting

2 Creating Progress Presentation II

Algorithms behind the implementation

- The code mounts Google Drive to access a dataset containing images of facial expressions representing different emotions.
- It loads the data using TensorFlow's image_dataset_from_directory function.
- Data preprocessing will be performed using an ImageDataGenerator.
- InceptionV3 is used for feature extraction, followed by custom layers for regularization and classification.
- The model is compiled with Adam optimizer, categorical cross-entropy loss, and accuracy metric.
- The model is trained on the training dataset over specified epochs, and training history is recorded.

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Data collection

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3 Implementing Backend

- Implementation of the model by using google colab platform

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EXPLORER

> EMOTION_MODEL
> OUTLINE
> TIMELINE

app.py   1   ×   face_model.h5

app.py > index

```python
from flask import Flask, request, render_template, jsonify
import numpy as np
from PIL import Image
from io import BytesIO
from tensorflow.keras.models import load_model

app = Flask(__name__)
model = load_model('face_model.h5')
class_map = {0: 'Angry', 1: 'Happy', 2: 'Neutral', 3: 'Sad', 4: 'Surprise'}

@app.route('/')
def index():
    return render_template('index.html')

@app.route('/predict', methods=['POST'])
def predict():
    try:
        img_file = request.files['image']
        img = Image.open(img_file.stream).convert("RGB")  # Convert to RGB format
        img = img.resize((80, 80))  # Resize to the model's input size
        img_array = np.array(img)
        img_processed = np.expand_dims(img_array, axis=0)
        img_processed = img_processed / 255.0

        prediction = model.predict(img_processed)
        emotion_label = class_map[np.argmax(prediction)]

        return jsonify({'emotion': emotion_label})

    except Exception as e:
        return jsonify({'error': str(e)})
```
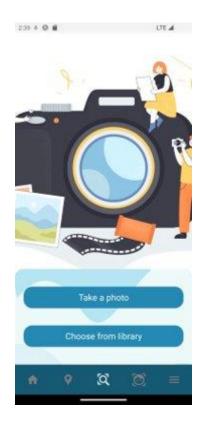
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face_classification (1).ipynb

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```python
plt.plot(history.history['val_accuracy'], label='validation set')
plt.legend()
```

<matplotlib.legend.Legend at 0x787ecffeb3d0>

4 Implementing Frontend

5 Updated Gantt Chart

Task Name	2022		2023											
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Planning Phase														
Initial discussion with the supervisor	█													
Feasibility study	█	█												
Requirement analysis	█	█												
Literature review		█	█											
System overview diagram		█	█											
Topic assesment form		█												
Project proposal			█											
Prepaering SRS Document				█	█									
Software Design Phase														
UML diagram				█	█									
Design wireframe & mock-ups					█									
Implementation Phase														
Collection dataset					█									
Training Model					█	█	█	█						
Frontend development										█	█	█		
Backend development										█	█	█		
Testing Phase														
System Training										█	█			
Bug fixing										█	█			
Documentation Phase														
Research paper									█	█				
Final report										█	█	█		
Project status document & Log book										█	█	█		
Final Presentation & Viva											█	█		
Integration Phase														
Intigrate backend and frontend												█		

🟦	Completed
🟪	In progress
🟥	Not started yet

6 Work load allocation

7   Future Development and Tasks

1. Thesis and final report writing
2. Final Presentation

Current Progress – 90%