

A PERSONAL TRAINER APP TO SELF-TRAIN AND IMPROVE PRESENTATION SKILLS

21_22-J 02



OUR TEAM



Dr. Shyam Mehraaj
Supervisor



Ms. Samanthi Siriwardene
Co-Supervisor



IT18205152
Shehara A.K.G.H.



IT18229912
Wanigasinghe N.T.



IT18227750
Wandana R.A.K.



IT17535090
Wedage C.V.



INTRODUCTION

- The goal of doing a presentation is to attract the attention of the audience through a good delivery.
- A good presentation should be written and delivered in error-free and comprehensible English, and the presenter should look well-prepared and rehearsed.



INTRODUCTION CONT.

- People are accustomed to practicing presentations beforehand, preferably with a friend, roommate, or teammate who will listen.
- The proposed system “Presently” will self-evaluate the presentation skills of an individual.

**Is there a
mechanism in
place to evaluate
presentation
skills
in advance?**





RESEARCH PROBLEM

- Audio analyzing
- **PRONUNCIATION & VOCABULARY ERRORS**

- Audio analyzing
- **MIS MATCH & MATCH OF TOPIC TONE**

- Video analyzing
- **EMOTION DETECTION**

- Content analyzing
- **SLIDE QUALITY**

MAIN OBJECTIVE

To develop a Mobile Responsive Web Application to evaluate the presentation skills.

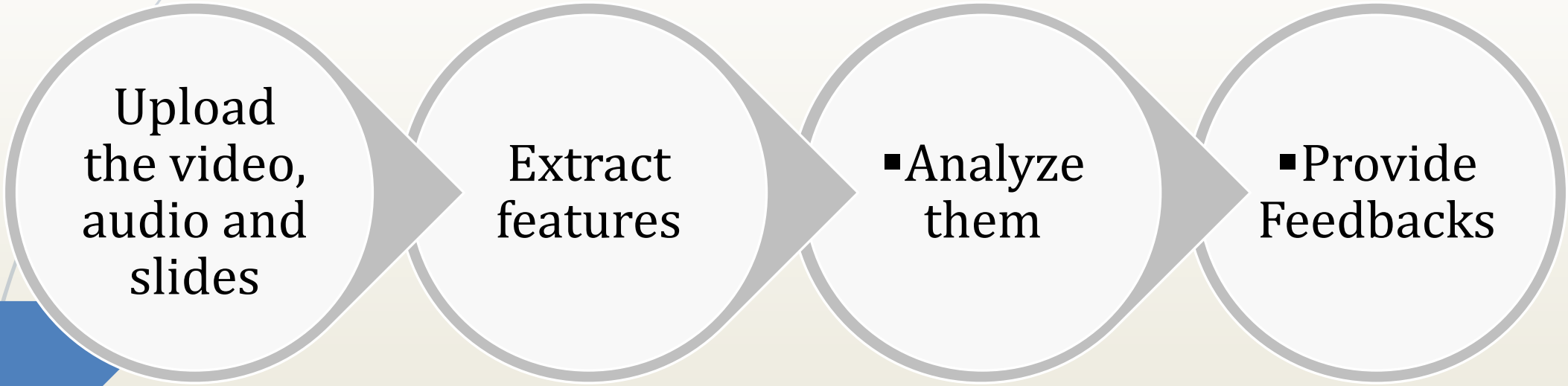


SUB OBJECTIVES

- To provide a user with incorrect pronunciation and vocabulary mistakes and to detect the user what emotions and enhancements used to present the story.
- To detect user, the match or mismatch between topic tone and emotions used to present the story.
- To check the grammar and spellings in presentation slides
- To suggest the user how to attract audience effectively by analyzing slides for accuracy of content and aesthetics using computer vision and rules of design-best-practices.



METHODOLOGY



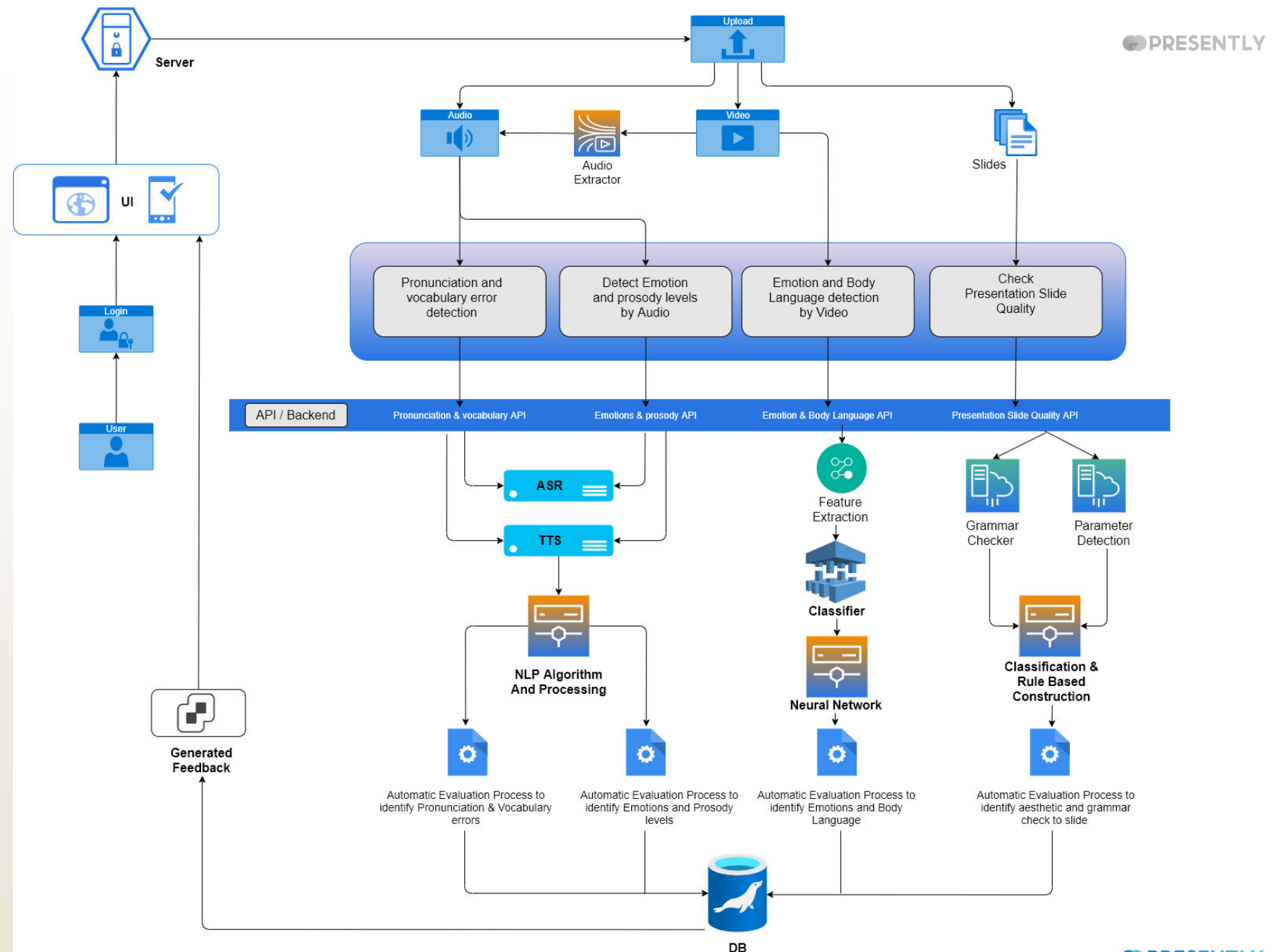
Upload
the video,
audio and
slides

Extract
features

■ Analyze
them

■ Provide
Feedbacks

SYSTEM OVERVIEW





IT18205152 | Shehara A.K.G.H

Specializing in Software Engineering

Provide incorrect pronunciation and vocabulary mistakes

BACKGROUND

- Rehearse before the presentation.
- For effective communication, everyone should have a good vocabulary & correct pronunciation



RESEARCH QUESTION

- Identifying possible pronunciation issues that could arise throughout the presentation
- Evaluation of grammatical mistakes in enhancing the audience's understanding of the presentation





OBJECTIVES

- Detection of the pronunciation mistakes that will occur during the presentation.
- Analyzation of vocabulary errors to make the presentation more accurate to the audience.



RESEARCH METHODOLOGY





PROGRESS

- Converted Speech to Text
- Converted Text to speech
- Audio Signal Analysis

COMPLETED(50%)

- Audio Comparison
- Vocabulary Error Detection

90% Progress Presentation

- Generating Feedbacks
- System Integration

Final Presentation



CURRENT PROGRESS

1. Converted Speech to Text and Text to Speech

- Environment setup to create Google cloud project
- Enable Speech to Text Google APIs
- Enable Text To Speech Google APIs
- Creation of Service Account

2. Audio Preprocessing

- Pre-emphasis of voice signal
- Framing and windowing of voice signals
- Applying Fourier-Transform and Power Spectrum to audio signals
- Mel Frequency Cepstrum Coefficient Array computing filter banks



ACHIEVEMENTS

```
In [7]: # Perform the text-to-speech request on the text input with the selected
# voice parameters and audio file type
response = client.synthesize_speech(
    input=synthesis_input, voice=voice, audio_config=audio_config
)
```

```
In [8]: # The response's audio_content is binary.
with open("output.mp3", "wb") as out:
    # Write the response to the output file.
    out.write(response.audio_content)
    print('Audio content written to file "output.mp3" ')
```

Audio content written to file "output.mp3"

```
config = speech.RecognitionConfig(
    encoding=speech.RecognitionConfig.AudioEncoding.LINEAR16,
    sample_rate_hertz=16000,
    language_code="en-US",
)
```

```
In [7]: # Detects speech in the audio file
response = client.recognize(config=config, audio=audio)

for result in response.results:
    print("Transcript: {}".format(result.alternatives[0].transcript))
```

Transcript: how old is the Brooklyn Bridge



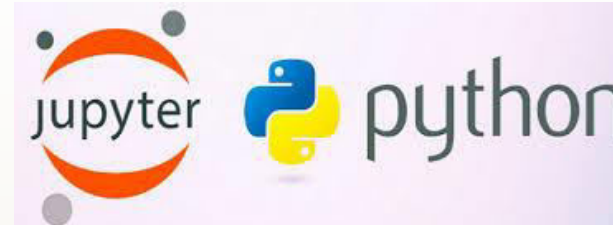
TASKS TO BE COMPLETED

- Audio Comparison
- Vocabulary Error Detection
 - Audio Extraction
- Feedback Generation
- System Integration

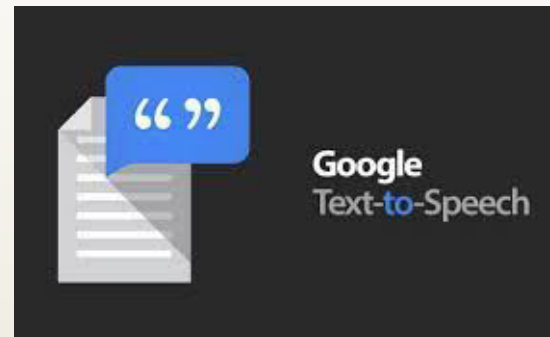


TOOLS & TECHNOLOGIES

- Jupyter Notebook
- Google API
- Python 3.9
- TensorFlow



Google APIs



FUNCTIONAL REQUIREMENTS

- ✓ The system will check for pronunciation and vocabulary issues using the audio file.
- ✓ The system will provide feedback on the presenter's pronunciation and vocabulary errors.

NON-FUNCTIONAL REQUIREMENTS

- ✓ Performance
- ✓ Correctness
- ✓ Availability



IT18229912 | Wanigasinghe

N.T

Specializing in Software Engineering

Suggest the match or mismatch between topic tone and emotions

BACKGROUND

- Should maintain tone, pitch and emotions controlled.
- Performs the emotions and prosody naturalness of the presenter.



RESEARCH QUESTION

- Inability of finding the match and mis match between the tone of the speaker.
- Void of a system to detect the emotions during the presentation.





OBJECTIVES

- Implement more accurate and intelligent application to identify presenters' emotion and prosody levels.
- Analyse the match or mismatch between topic tone and emotions used to present the story.



RESEARCH METHODOLOGY





PROGRESS

- Emotion Recognition model building
- Train the model and predict emotions

COMPLETED(50%)

- Improve Data Augmentation
- Overall accuracy increase
- Build model for prosody checking

90% Progress Presentation

- Build frontend for output
- System integration for overall feedback

Final Presentation

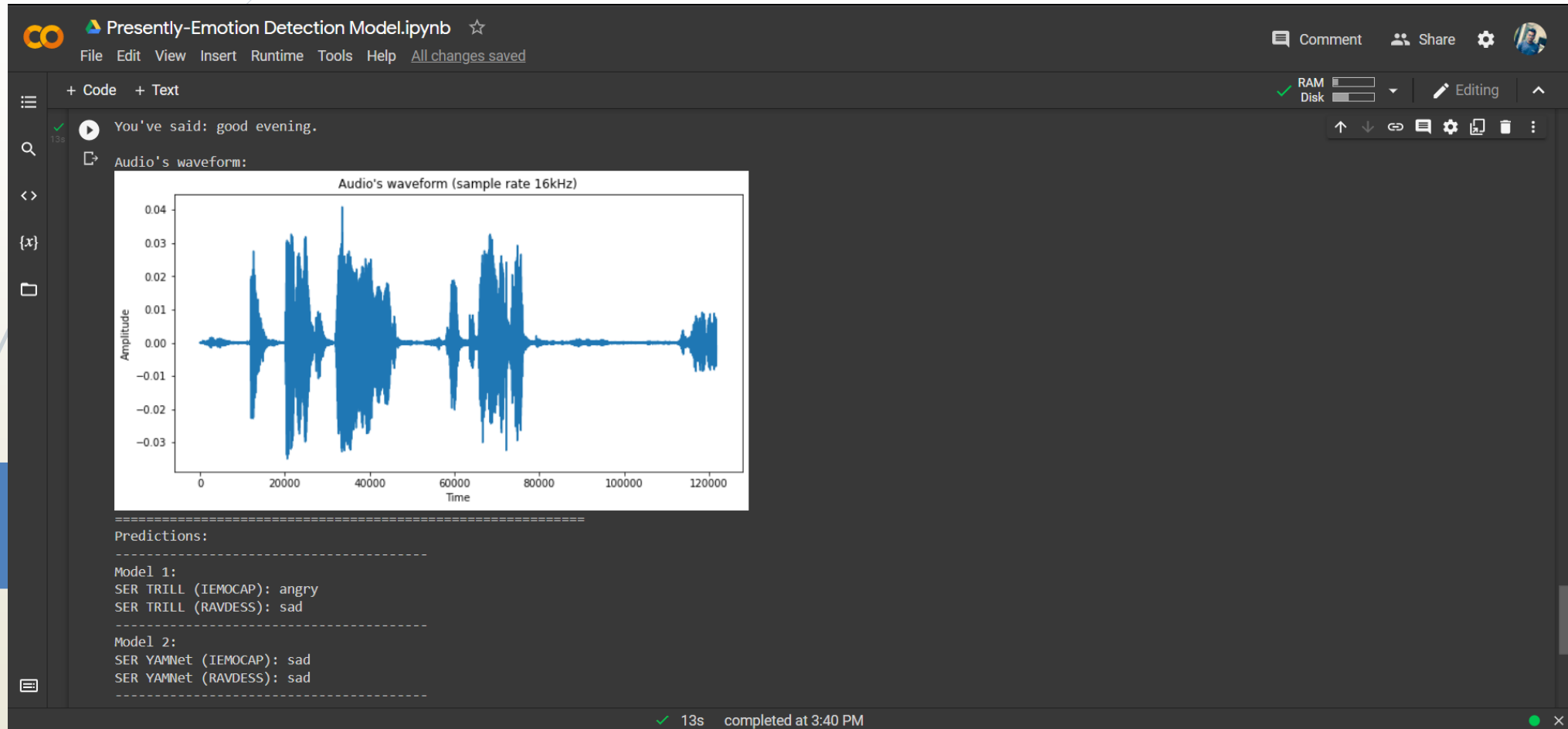


CURRENT PROGRESS

- Identified Datasets for emotions
- UI implement for user input
- Select feature extraction and create model
- Train model
- Take prediction
- Evaluate and improvements



ACHIEVEMENTS





TASKS TO BE COMPLETED

- **Model creation for prosody checking**
- **Model combination**
- **Improve accuracy**
- **API creation and deployment**
- **Build frontend for overall output**

TOOLS & TECHNOLOGIES

- Python 3.9
- Google Colab
- Praat
- Python Django
- Bootstrap
- TensorFlow
- Google API
- Fast API





FUNCTIONAL REQUIREMENTS

- ✓ Using the audio analysis system will provide the tonality and prosody errors.



NON-FUNCTIONAL REQUIREMENTS

- ✓ Performance
- ✓ Correctness
- ✓ Availability



IT18227750 | Wandana R.A.K

Specializing in Data Science

Suggest the user what emotions and enhancements used
to present the story

BACKGROUND

- Emotions, body language, eye contact, maintaining a confident posture is important.
- Speakers need to engage more with the audience and be confident during the presentation.



RESEARCH QUESTION

Inability to self-evaluate
presenting emotions and
body language postures due
to a lack of an appropriate
method or instrument.





OBJECTIVES

- To correctly extract the related emotions and body language postures.
- Check whether the emotions and body language are presentation related.



RESEARCH METHODOLOGY





PROGRESS

- Emotion Classification model building
- Framewise emotion detection in video

COMPLETED(50%)

- Shoulder movements detection from the video
- Unrelated emotion detection

90% Progress Presentation

- Generating Feedbacks
- System Integration

Final Presentation



CURRENT PROGRESS

- Identified datasets for facial emotions
- Emotion Classification Model Building using Convolutional Neural Network (CNN)
- Detect Basic seven emotions from the video
- Getting the most used Emotion in the video





ACHIEVEMENTS

```
Epoch 1/48
225/225 [=====] - 25s 107ms/step - loss: 0.9276 - accuracy: 0.6493 - val_loss: 1.0065 - val_accuracy: 0.6257
Epoch 2/48
225/225 [=====] - 24s 105ms/step - loss: 0.8897 - accuracy: 0.6647 - val_loss: 0.9973 - val_accuracy: 0.6339
Epoch 3/48
225/225 [=====] - 24s 106ms/step - loss: 0.8658 - accuracy: 0.6751 - val_loss: 0.9960 - val_accuracy: 0.6348
Epoch 4/48
225/225 [=====] - 24s 106ms/step - loss: 0.8455 - accuracy: 0.6809 - val_loss: 0.9971 - val_accuracy: 0.6301
Epoch 5/48
225/225 [=====] - 23s 104ms/step - loss: 0.8167 - accuracy: 0.6925 - val_loss: 1.0315 - val_accuracy: 0.6315
Epoch 6/48
225/225 [=====] - 24s 105ms/step - loss: 0.8035 - accuracy: 0.6981 - val_loss: 0.9890 - val_accuracy: 0.6435
Epoch 7/48
225/225 [=====] - 23s 103ms/step - loss: 0.7882 - accuracy: 0.7043 - val_loss: 1.0035 - val_accuracy: 0.6357
Epoch 8/48
225/225 [=====] - 24s 105ms/step - loss: 0.7732 - accuracy: 0.7144 - val_loss: 0.9881 - val_accuracy: 0.6449
Epoch 9/48
225/225 [=====] - 24s 106ms/step - loss: 0.7573 - accuracy: 0.7182 - val_loss: 0.9920 - val_accuracy: 0.6445
Epoch 10/48
225/225 [=====] - 24s 107ms/step - loss: 0.7404 - accuracy: 0.7254 - val_loss: 0.9877 - val_accuracy: 0.6462
Epoch 11/48
225/225 [=====] - 24s 107ms/step - loss: 0.7251 - accuracy: 0.7291 - val_loss: 0.9981 - val_accuracy: 0.6482
Epoch 12/48
225/225 [=====] - 24s 105ms/step - loss: 0.7096 - accuracy: 0.7363 - val_loss: 1.0051 - val_accuracy: 0.6507
Epoch 13/48
225/225 [=====] - 24s 106ms/step - loss: 0.6895 - accuracy: 0.7428 - val_loss: 1.0080 - val_accuracy: 0.6493
Restoring model weights from the end of the best epoch.
```



TASKS TO BE COMPLETED

- **Improve model accuracy**
- **Detecting unrelated emotions for the presentation**
- **Detecting shoulder movements from the video to recognize the emotions**
- **Feedback generation for the video**
- **System Integration**

TOOLS & TECHNOLOGIES

- Google Colab
- Python 3.9
- Open CV
- TensorFlow
- Keras





FUNCTIONAL REQUIREMENTS

- ✓ System will extract features from the uploaded video.
- ✓ Using video analysis system will detect presenters' emotions and body gestures.



NON-FUNCTIONAL REQUIREMENTS

- ✓ Performance
- ✓ Correctness
- ✓ Availability



IT17535090 | Wedage C.V

Specializing in Data Science

Suggest the user how to attract audience effectively by analyzing slides for accuracy of content and aesthetics

BACKGROUND

- Slides keep an audience's attention during a presentation to provide additional supporting.
- Checking the aesthetic quality of the slides and create textual error free quality slide.



RESEARCH QUESTION

- To create self-train web application to cater personal coach to check presentation slide quality by analyzing input pptx.
- Detect mistakes by Checking the accuracy of the content using grammar checker.





OBJECTIVES

- Do the proofreading and check the presentation slides accuracy.
- Aesthetic-aware slides to image synthesis.
- As optional check the relevancy of the presentation topic with the content of the slides.



RESEARCH RESEARCH METHODOLOGY METHODOLOGY



PROGRESS

- Colors Detection
- Generate ratios
- Quantify sharpness
- Grammar checker
- Identify color contrast

COMPLETED(50%)

- Grammar Checker
- Expert system for generate feedback

90% Progress Presentation

- System Integration

Final Presentation

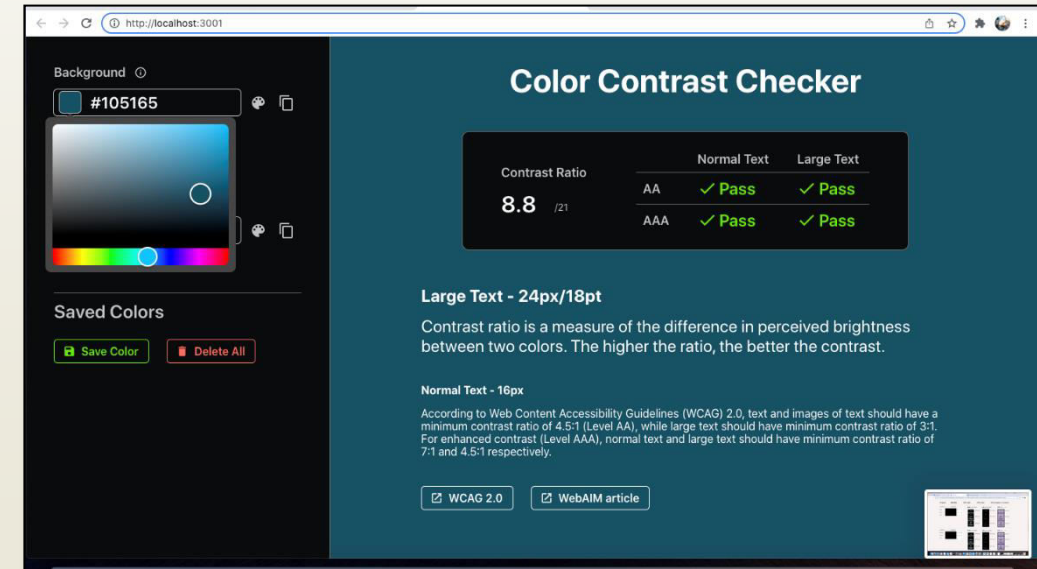
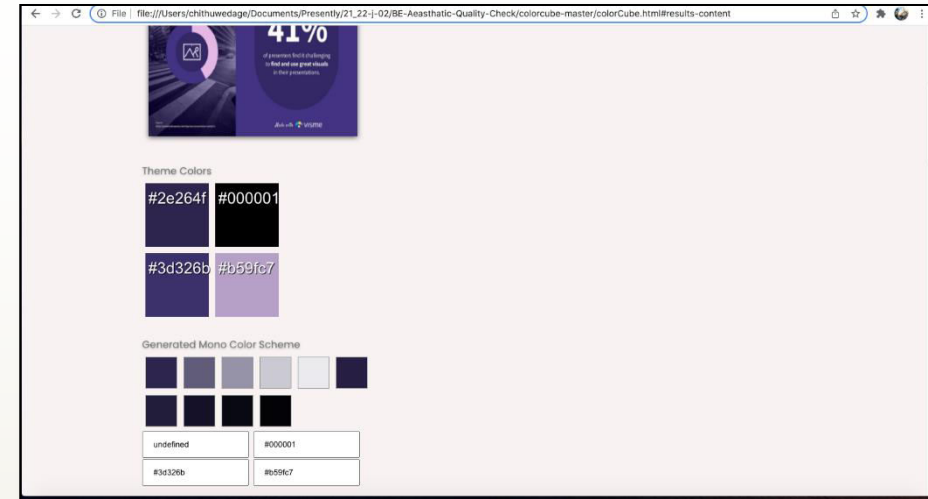
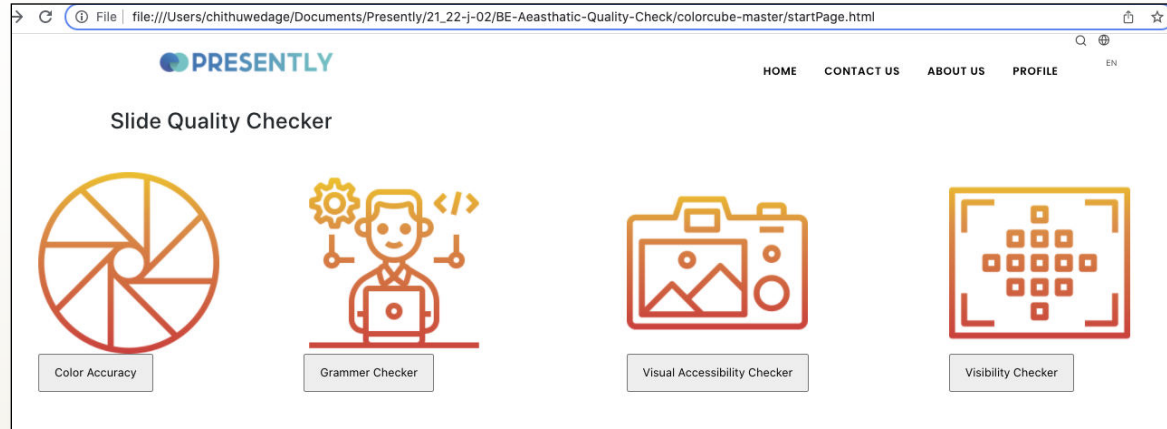


CURRENT PROGRESS

- Detect colors from input presentation slides and Generate ratios according to the detected colors.
- Completed color cube accuracy according to WCAG levels, get the output values with most legible pairs and hoover text.
- Checked contrast for the background and foreground.
- According to Web Content Accessibility Guidelines (WCAG) 2.0, text and images of text should have a minimum contrast ratio of 4.5:1 (Level AA), while large text should have minimum contrast ratio of 3:1.
- Quantify sharpness using quantify sharpness algorithm and get the score.



ACHIEVEMENTS





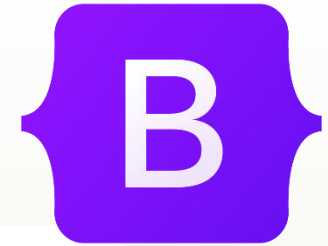
TASKS TO BE COMPLETED

- **Advanced grammar checker**
 - **Feedback Generation**
 - **System Integration**

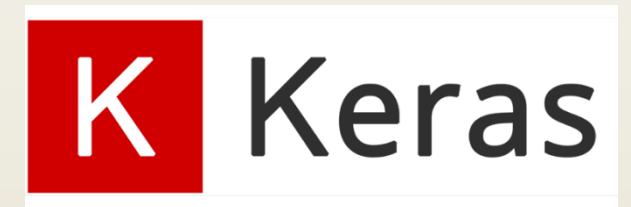


TOOLS & TECHNOLOGIES

- Google Colab
- NLP with Python NLTK
- Python 3.9
- TensorFlow
- Bootstrap



Natural Language Analysis
with Python NLTK





FUNCTIONAL REQUIREMENTS

- ✓ Obtain a presentation slide to get aesthetic analysis.
- ✓ Received final feedback (output) for the uploaded presentation and slides.



NON-FUNCTIONAL REQUIREMENTS

- ✓ Performance
- ✓ Correctness
- ✓ Availability

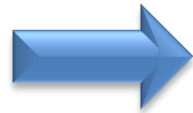


COMMERCIALIZATION

- **Target Audience**
Employees in any industry
University Students and lecturers
- **Free Application**
Free Access to the application
- **Advertisement**



1
Stage
Free



2
Stage
Advertisement Fee

Thank You !



21_22-J
02

Any Questions?



21_22-J
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