Multi-Model Approach to Recommend Personalized Music Playlist

TMP – 2023 – 24 - 065

Status Document – 2

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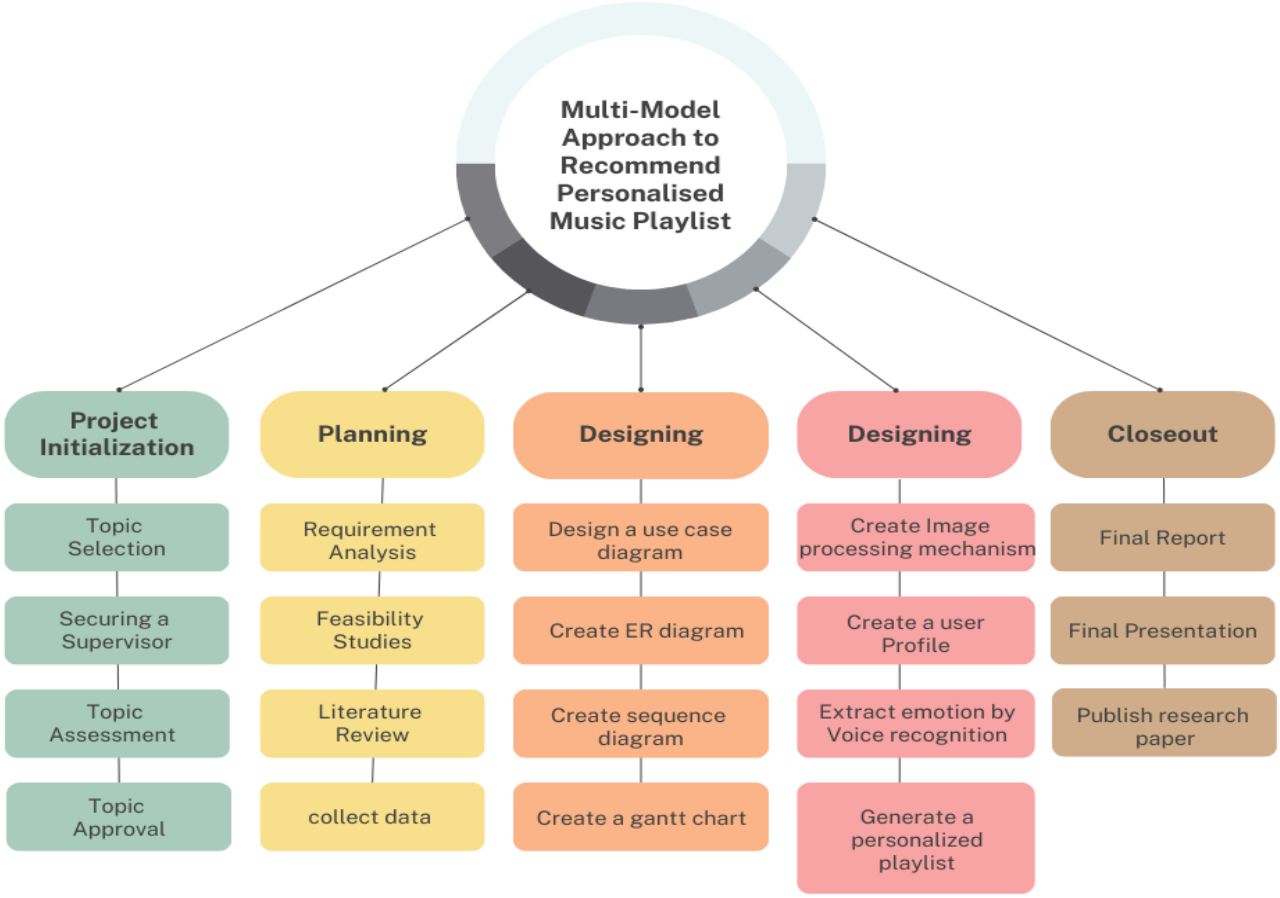
Introduction

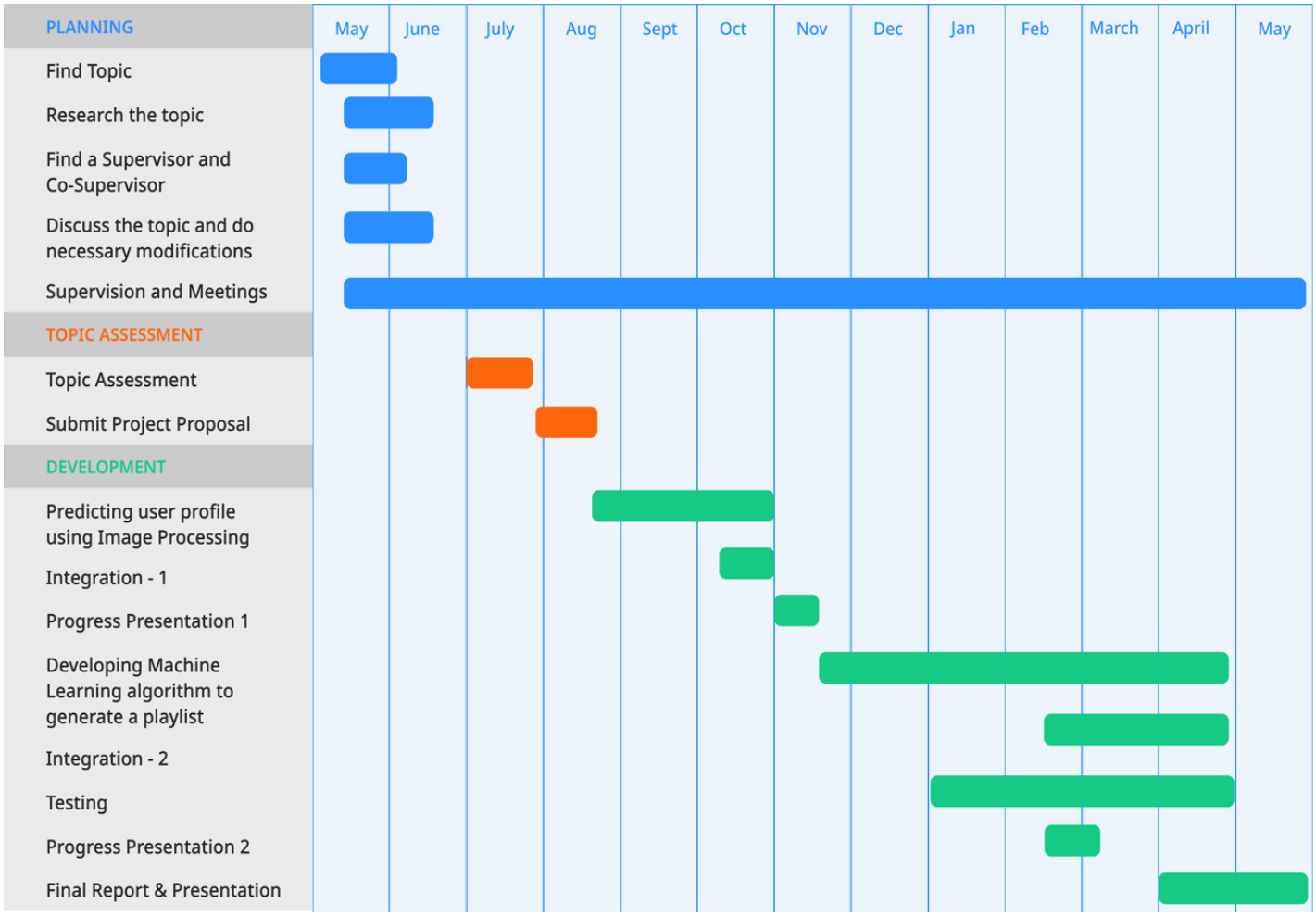
Music recommender systems play a crucial role in assisting users to discover new music that aligns with their preferences, enhancing their overall music consumption experiences. The end goal of our research is to implement a new system to provide a personalized music experience to the user. As we have conducted a survey, we have found that the Age group and the Gender of the music listener is impacting to the music recommendation. Therefore, my contribution to the recommender system is to identify and analyze user profile based on a selfie image to overcome the main problems in existing music applications, which are cold start problem, lengthy forms to fill when signing up to the system by introducing an innovative approach. I have implemented a convolutional neural network (CNN)-based facial image classification model. This model will harness deep learning technologies to accurately discern users' age and gender through their facial features. Integrating this facial image classification model with our music recommendation system will create a unified mobile application.

This document is prepared to showcase the status of the project along with the proofs with screenshots of the teamwork within the group.

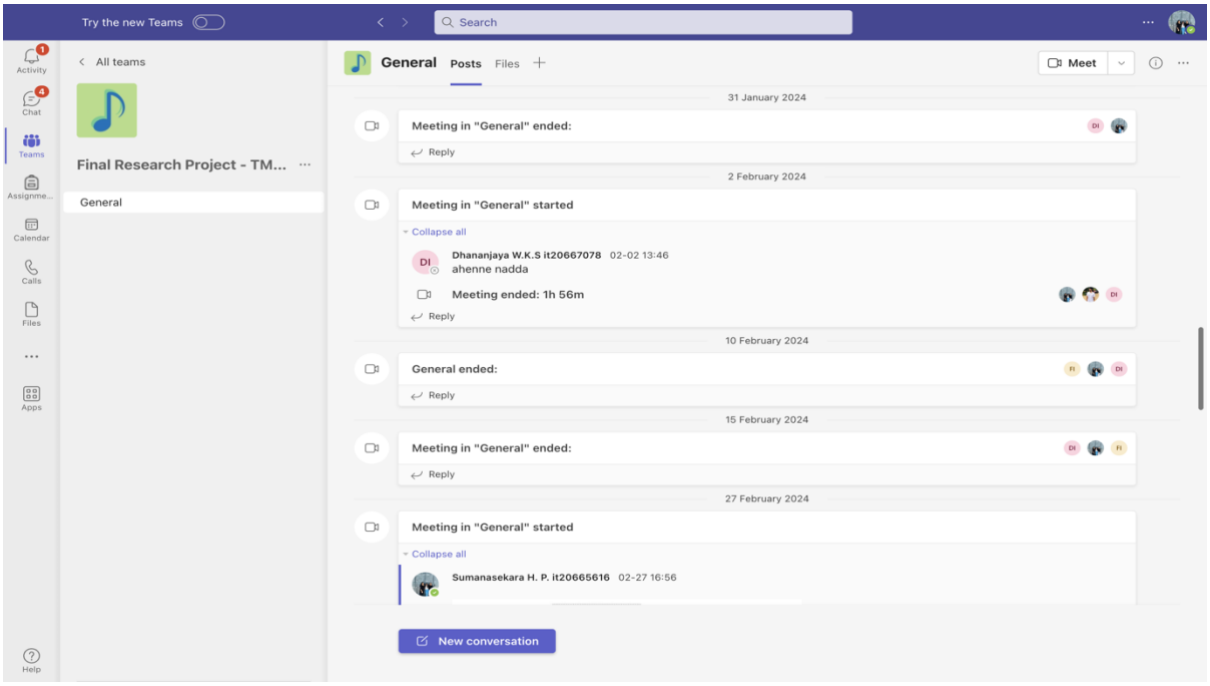
Work Breakdown Chart

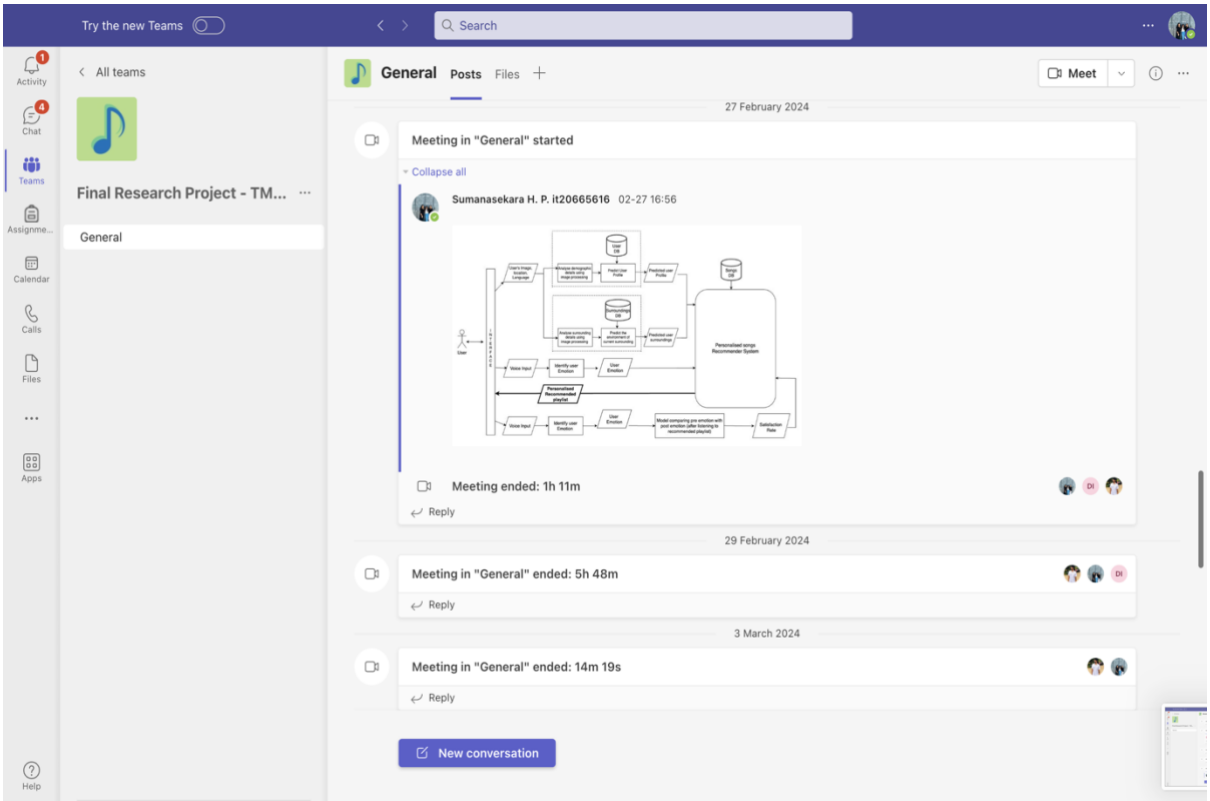


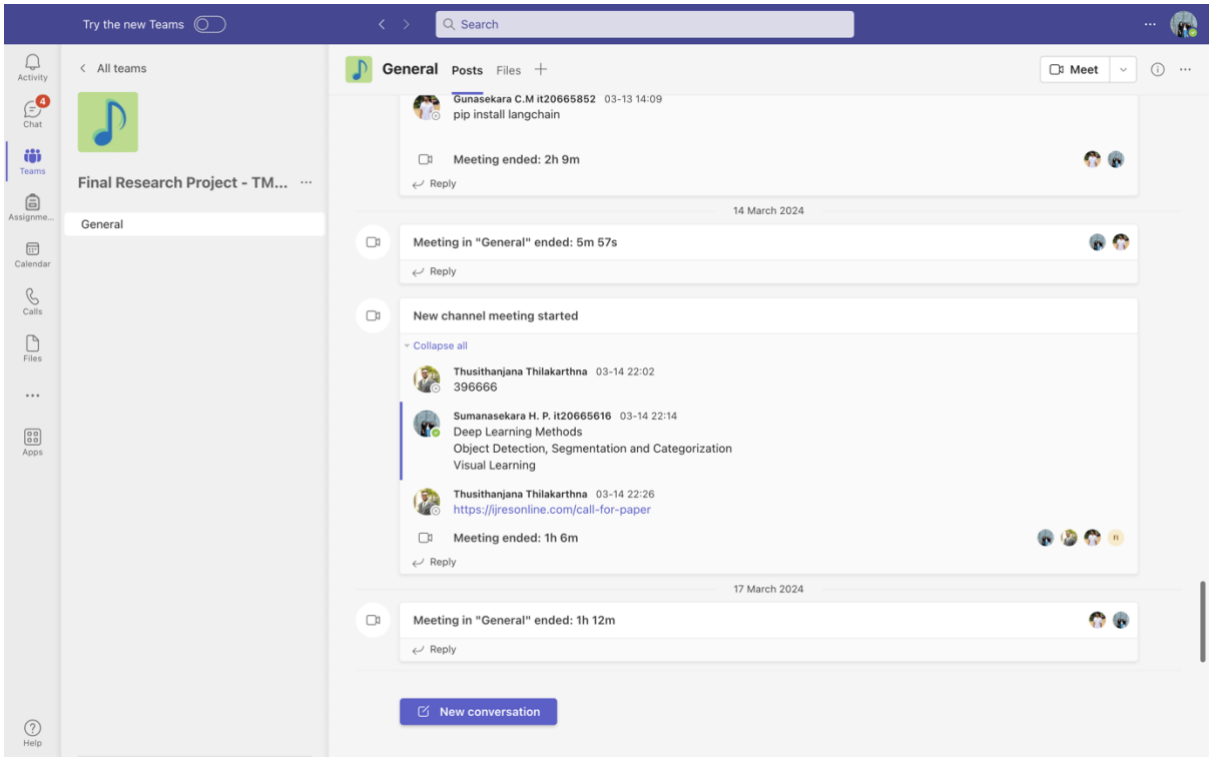
Gantt Chart


PLANNING
Find Topic
Research the topic
Find a Supervisor and Co-Supervisor
Discuss the topic and do necessary modifications
Supervision and Meetings
TOPIC ASSESSMENT
Topic Assessment
Submit Project Proposal
DEVELOPMENT
Predicting user profile using Image Processing
Integration - 1
Progress Presentation 1
Developing Machine Learning algorithm to generate a playlist
Integration - 2
Testing
Progress Presentation 2
Final Report & Presentation
May
June
July
Aug
Sept
Oct
Nov
Dec
Jan
Feb
March
April
May

Continuous Team Collaboration via MS Teams.



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Search
All teams
Final Research Project - TM...
General
Posts
Files
Meet
Gunasekara C.M it20665852 03-13 14:09
pip install langchain
Meeting ended: 2h 9m
Reply
14 March 2024
Meeting in "General" ended: 5m 57s
Reply
New channel meeting started
Collapse all
Thusithanjana Thilakarthna 03-14 22:02
396666
Sumanasekara H. P. it20665616 03-14 22:14
Deep Learning Methods
Object Detection, Segmentation and Categorization
Visual Learning
Thusithanjana Thilakarthna 03-14 22:26
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17 March 2024
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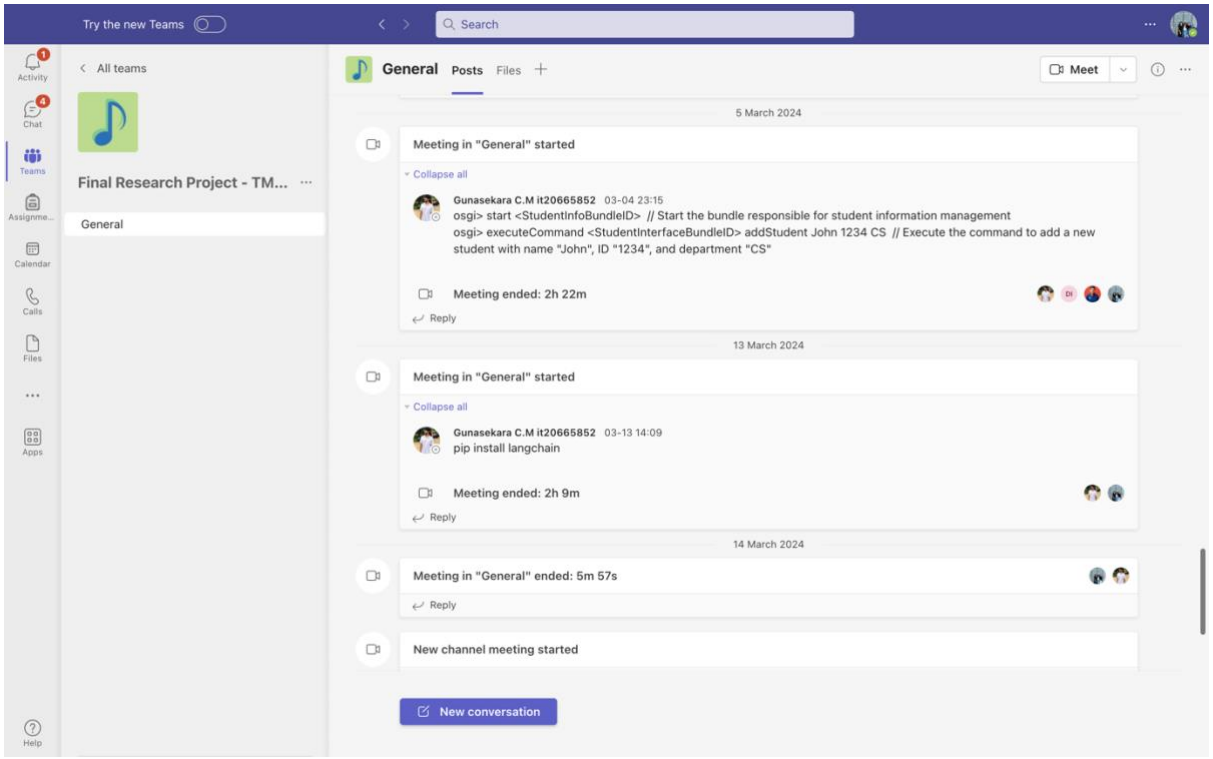
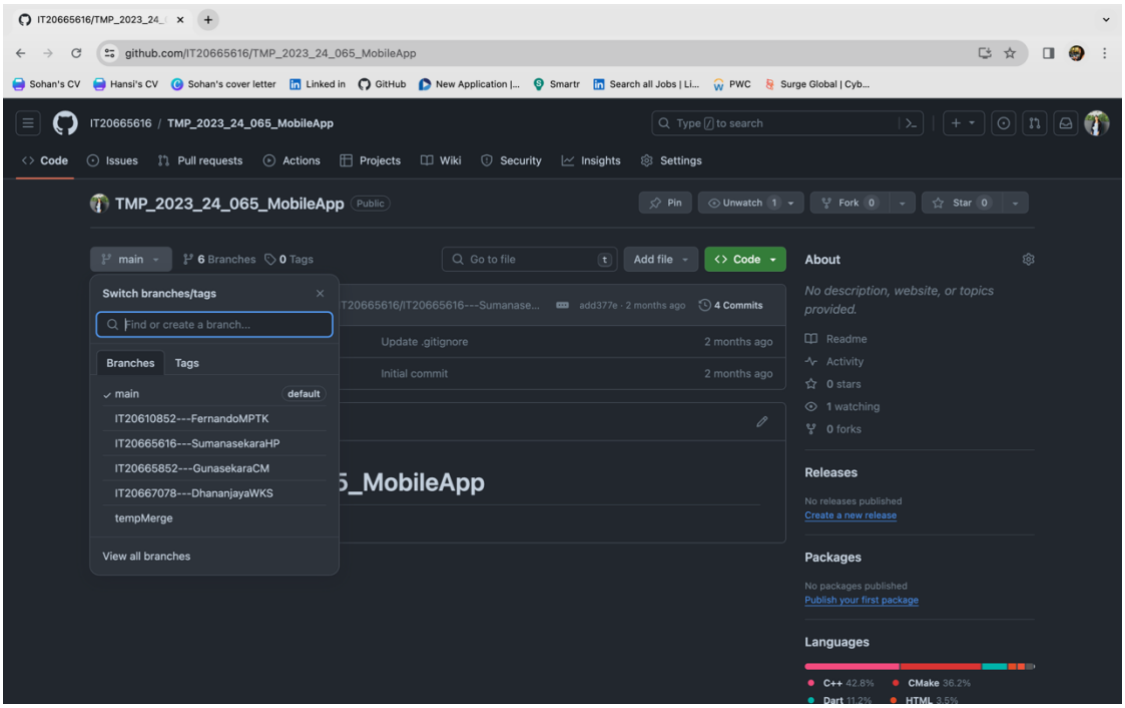
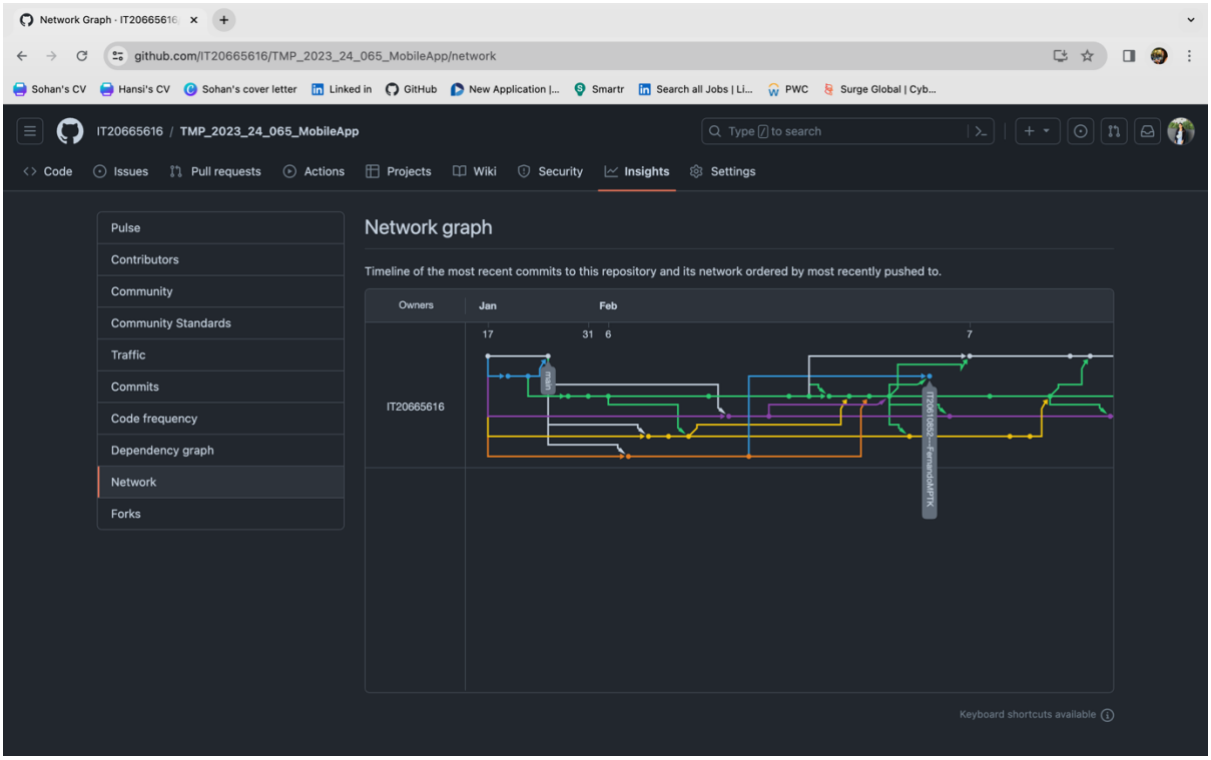
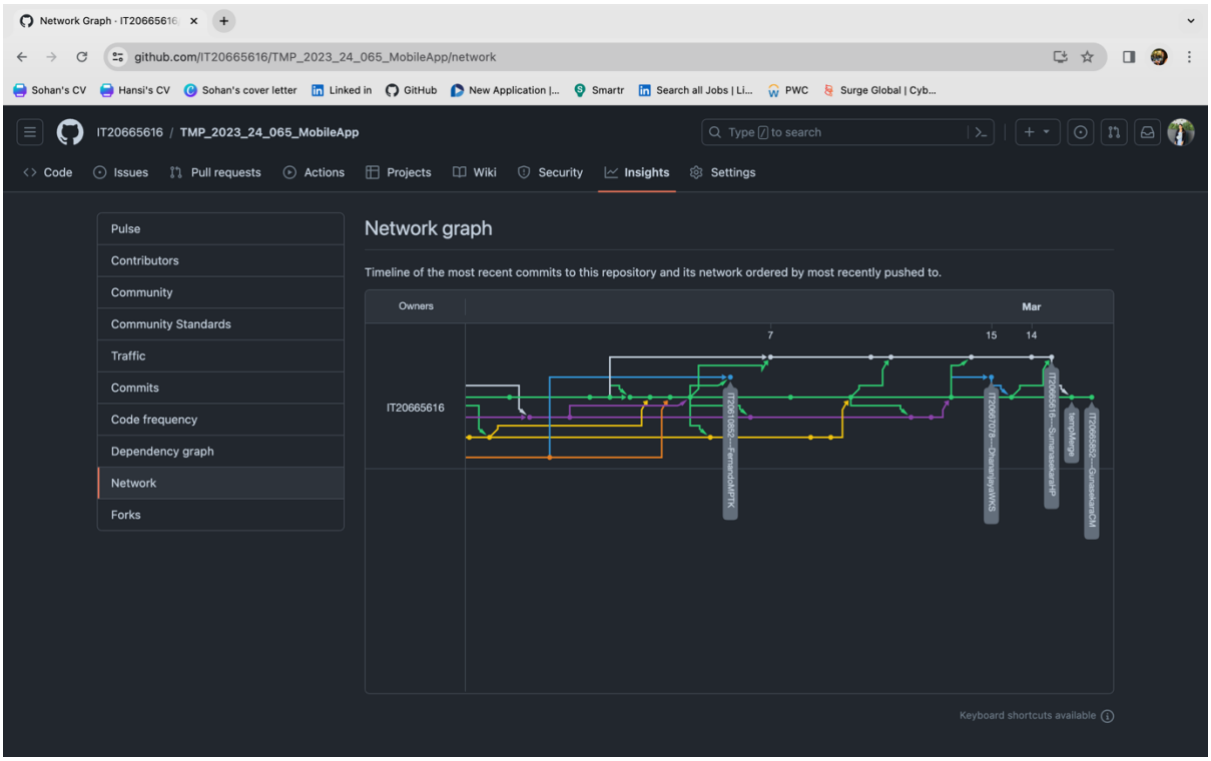
New conversation

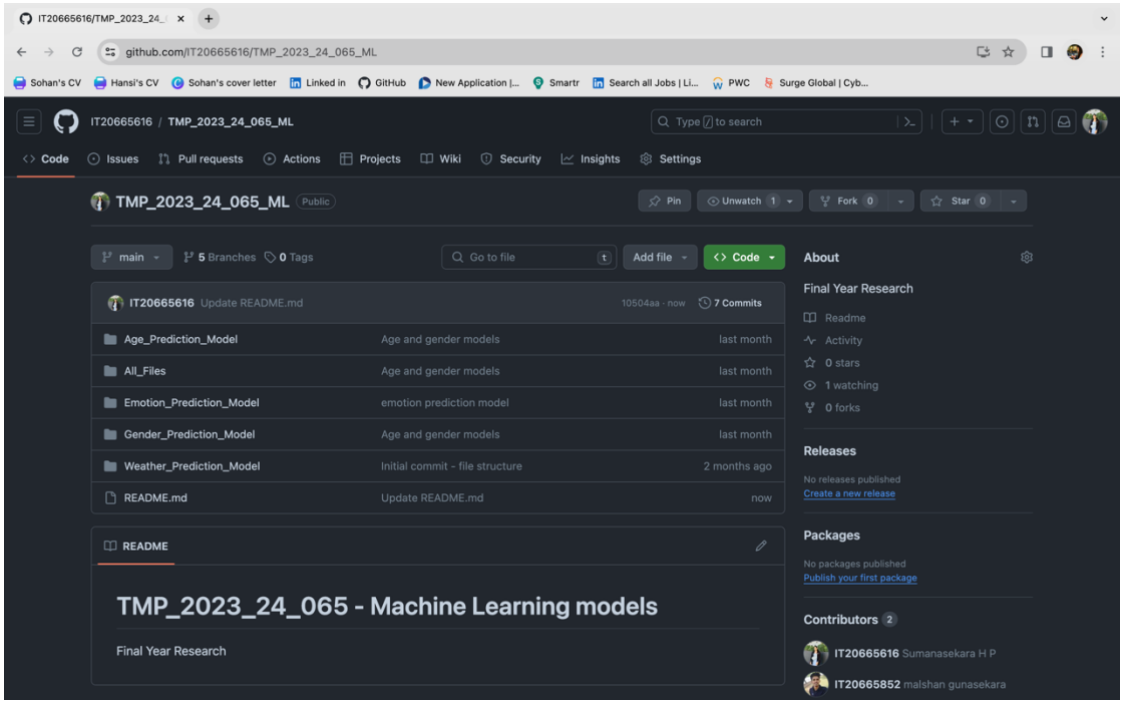

Try the new Teams
Search
All teams
Final Research Project - TM...
General
Posts
Files
Meet
5 March 2024
Meeting in "General" started
Collapse all
Gunasekara C.M it20665852 03-04 23:15
osgi> start <StudentInfoBundleID> // Start the bundle responsible for student information management
osgi> executeCommand <StudentInterfaceBundleID> addStudent John 1234 CS // Execute the command to add a new student with name "John", ID "1234", and department "CS"
Meeting ended: 2h 22m
Reply
13 March 2024
Meeting in "General" started
Collapse all
Gunasekara C.M it20665852 03-13 14:09
pip install langchain
Meeting ended: 2h 9m
Reply
14 March 2024
Meeting in "General" ended: 5m 57s
Reply
New channel meeting started
New conversation

Team Collaboration and project management via Github.






Network Graph - IT20665616
github.com/IT20665616/TMP_2023_24_065_MobileApp/network
IT20665616 / TMP_2023_24_065_MobileApp
Type / to search
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
Pulse
Contributors
Community
Community Standards
Traffic
Commits
Code frequency
Dependency graph
Network
Forks
Network graph
Timeline of the most recent commits to this repository and its network ordered by most recently pushed to.
Owners
Mar
7
15
14
IT20665616
Keyboard shortcuts available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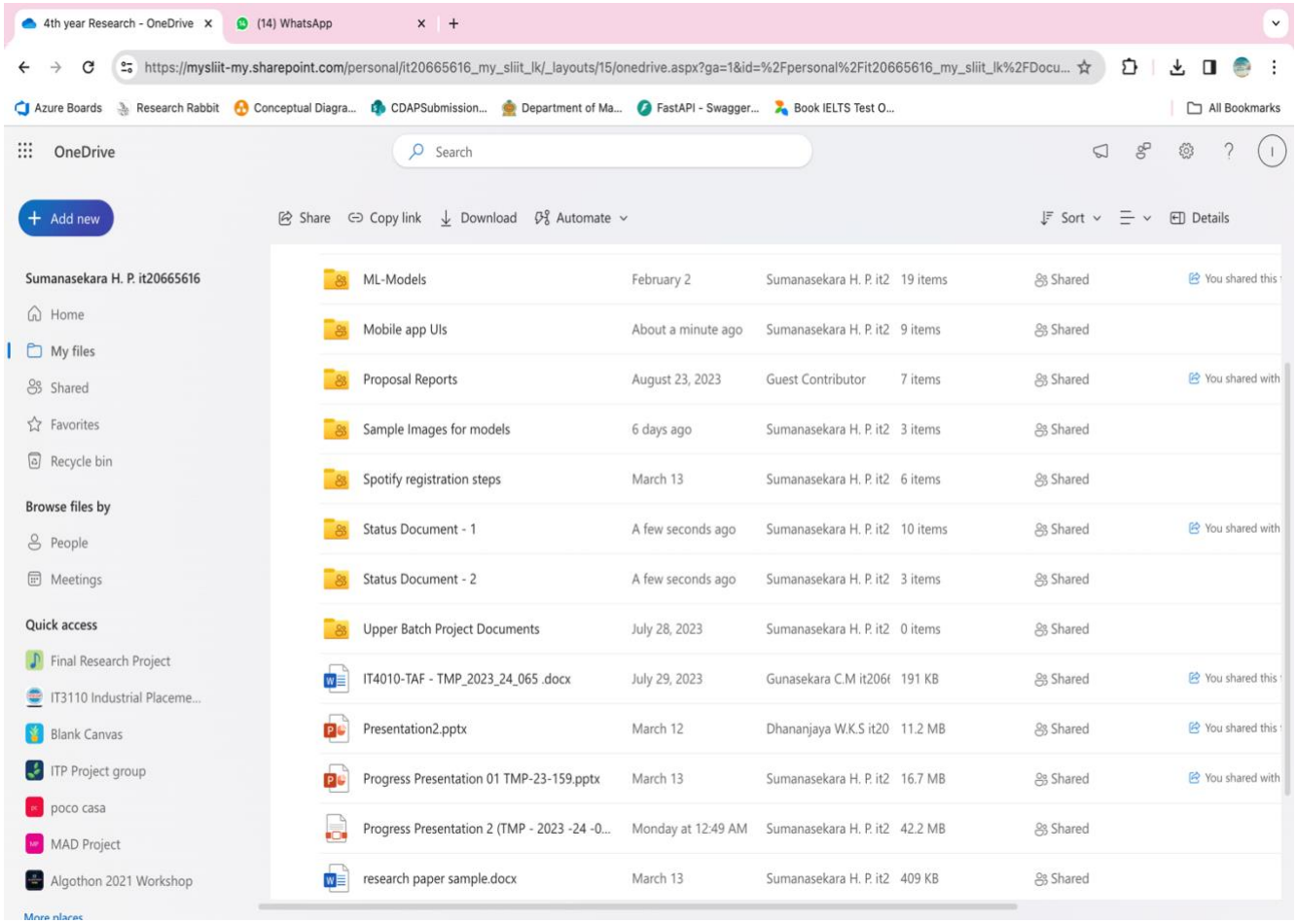
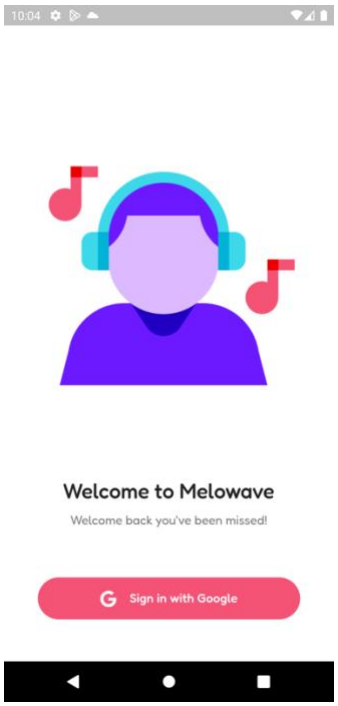
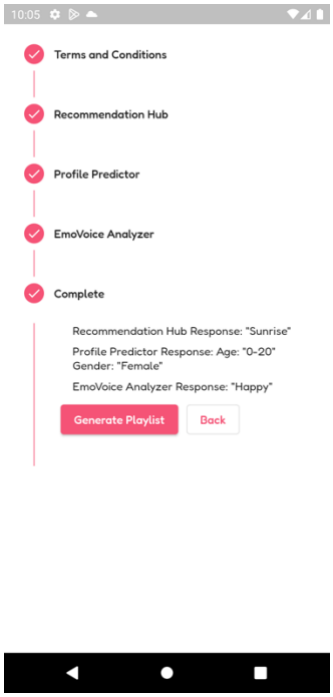
github.com/IT20665616/TMP_2023_24_065_ML
IT20665616 / TMP_2023_24_065_ML
Type / to search
Code
Issues
Pull requests
Actions
Projects
Wiki
Security
Insights
Settings
TMP_2023_24_065_ML
Public
Pin
Unwatch 1
Fork 0
Star 0
main
5 Branches
0 Tags
Go to file
Add file
Code
About
Final Year Research
Readme
Activity
0 stars
1 watching
0 forks
IT20665616 Update README.md
10504aa · now
7 Commits
Age_Prediction_Model
Age and gender models
last month
All_Files
Age and gender models
last month
Emotion_Prediction_Model
emotion prediction model
last month
Gender_Prediction_Model
Age and gender models
last month
Weather_Prediction_Model
Initial commit - file structure
2 months ago
README.md
Update README.md
now
README
TMP_2023_24_065 - Machine Learning models
Final Year Research
Releases
No releases published
Create a new release
Packages
No packages published
Publish your first package
Contributors 2
IT20665616 Sumanasekara H P
IT20665852 malshan gunasekara

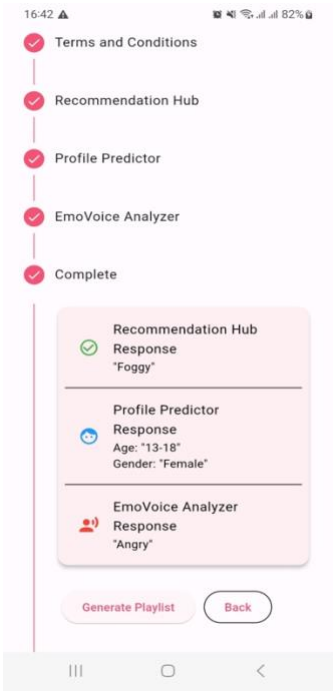
Team Collaboration and project management via One Drive.

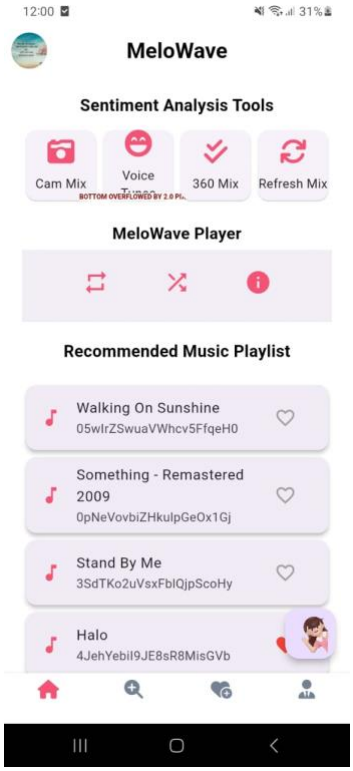


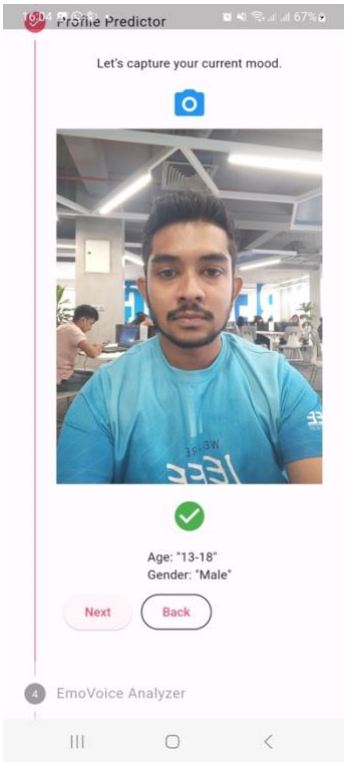
User Interfaces of the ‘MeloWave’ Mobile Application.



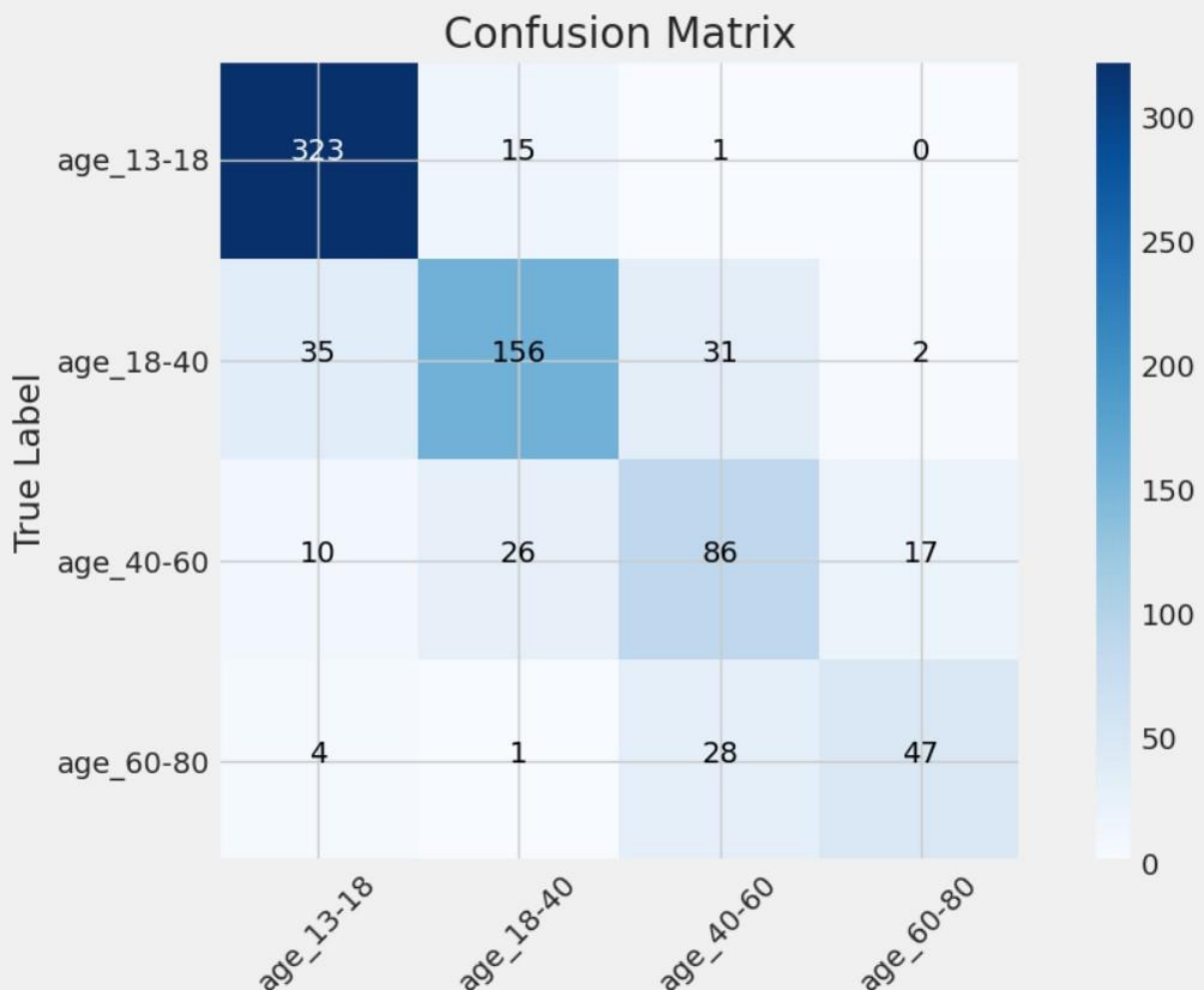


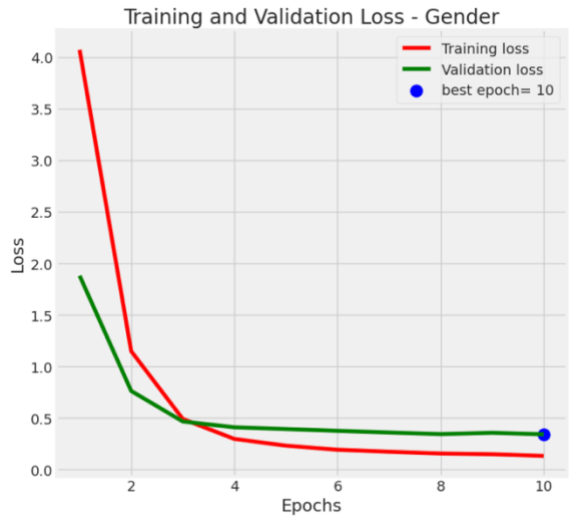


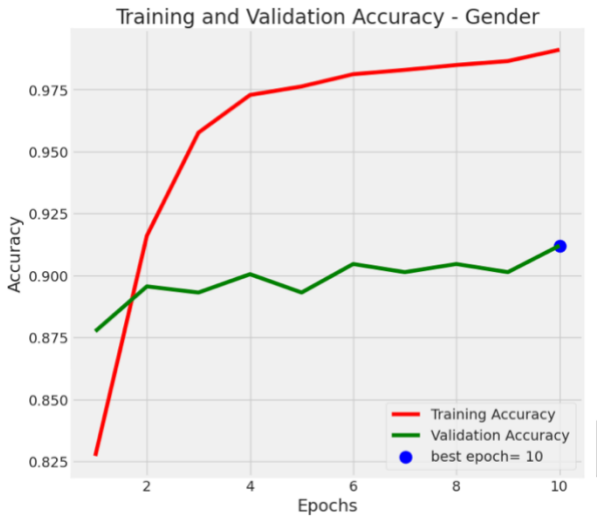




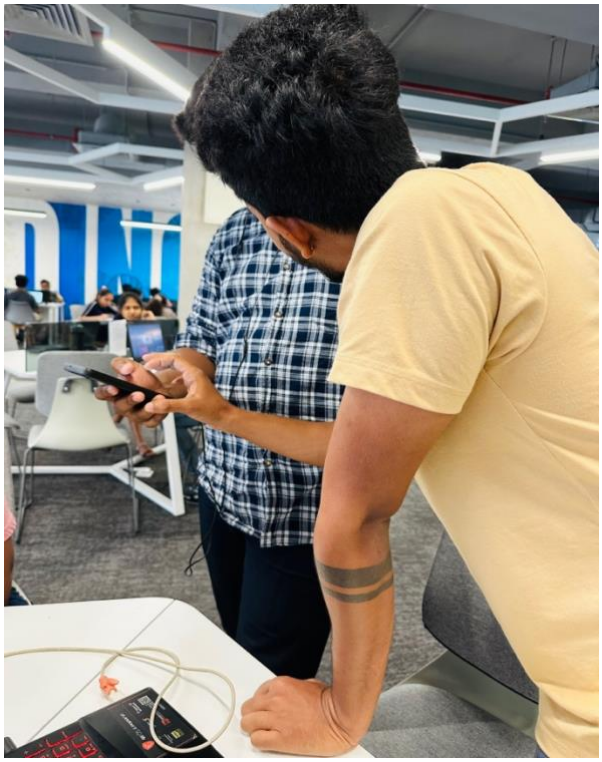
Finalized Machine Learning models for age and gender prediction.

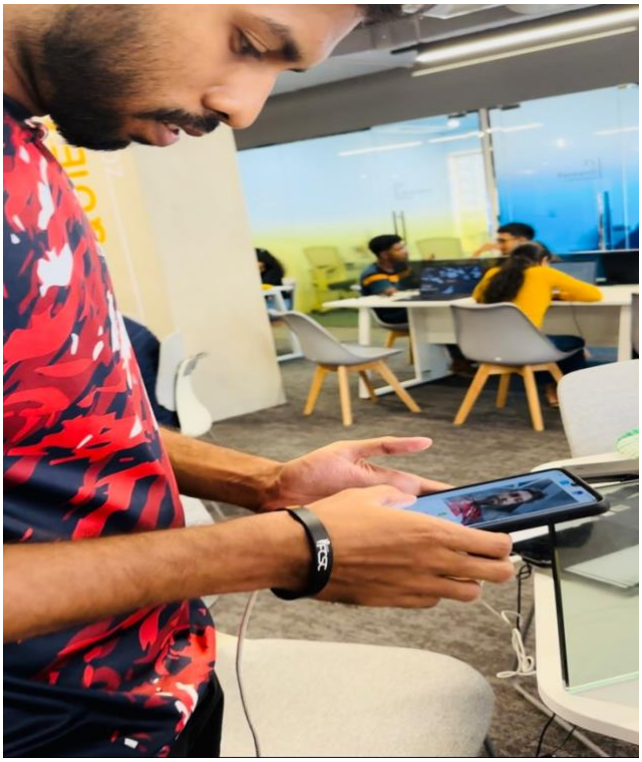


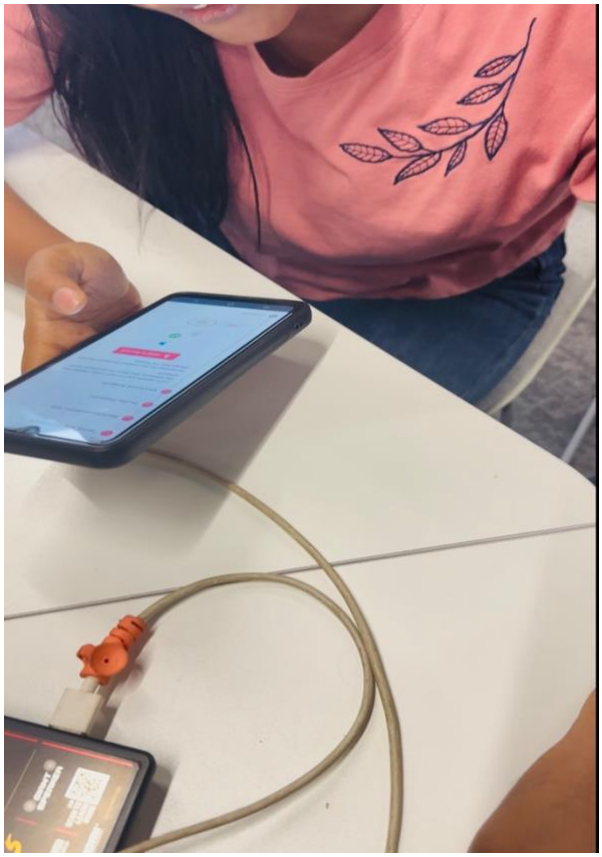


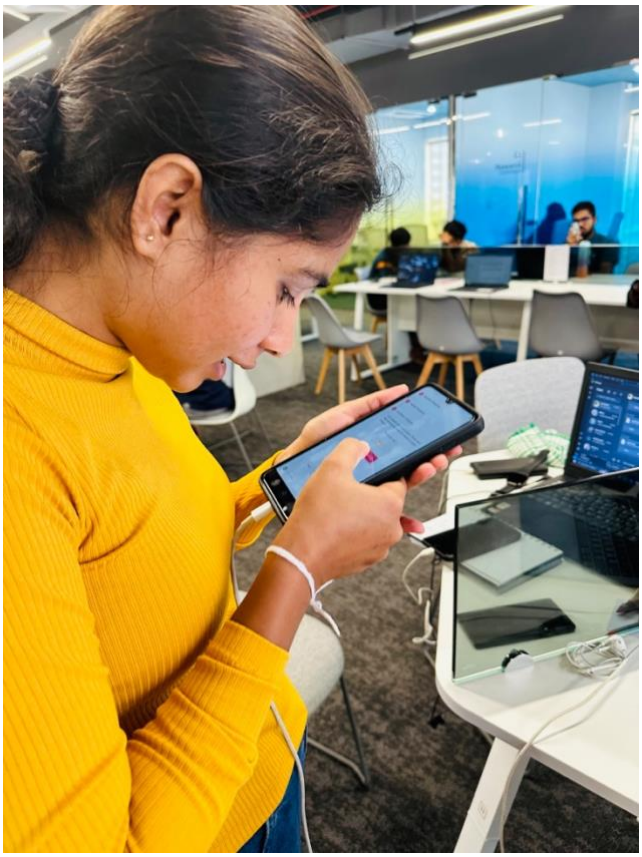


Field Testing.









Field Testing Feedbacks.

2. Is your gender predicted correctly?

More Details Insights

yes	9
No	2

4. Is your surrounding predicted correctly?

More Details Insights

Yes	7
No	1
Slightly different	2
Completely different	1

5. Is your emotion state predict correctly?

More Details Insights

Yes	8
No	0
Maybe	3

6. Generate accurate playlist based on your current emotion state ?

More Details Insights

Agree	9
Disagree	0
Partially agree	1
Partially disagree	0
Other	1