IBM Project Presentation
On
“Emotion Detection from Facial Expressions”

By

Group ID: G03

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Introduction

- Our project aims to create an Emotion Detection System using Facial Expression Recognition powered by AI and ML. By accurately identifying emotions like joy, sadness, and anger in real-time, we seek to enhance human-computer interactions across industries such as customer service, healthcare, education, and entertainment. Our goal is to develop empathetic and responsive artificial systems for improved user experiences.

Problem Statement & Scope

- **Focus:** Developing a system for real-time emotion detection from facial expressions in live video.
- **Target Emotions:** Seven basic emotions (happiness, sadness, anger, fear, surprise, disgust, neutral).
- **Challenge**: Facial expressions are complex, subjective, and context-dependent, requiring robust algorithms for accurate and efficient real-time recognition.
- **Impact:** Revolutionize human-machine interaction, enhance communication, and provide valuable insights into human emotions.
- **Applications:** Human-computer interaction, customer experience analysis, mental health, education, security.

Expected Outcome

- The expected outcome for a facial expression emotion detection project would be an accurate system capable of analyzing facial features to identify and classify emotions such as happiness, sadness, anger, etc.

- It could be used in various applications, like human-computer interaction, mental health monitoring, or market research. Success would be measured by the model's precision and recall rates in correctly identifying emotions.

Tools & Technologies

- **Programming Languages**: Python, Django, React.js
- **Libraries**: Python 3, OpenCV, TensorFlow
- **Datasets**: Kaggle, Github
- **Cloud-based Solutions**: Vercel. Render, Neon.Tech

Methodology (Modules)

- Signup
- Login
- Live face detection interface
- Admin page
- User profile page
- Report

Flowchart & Algorithm

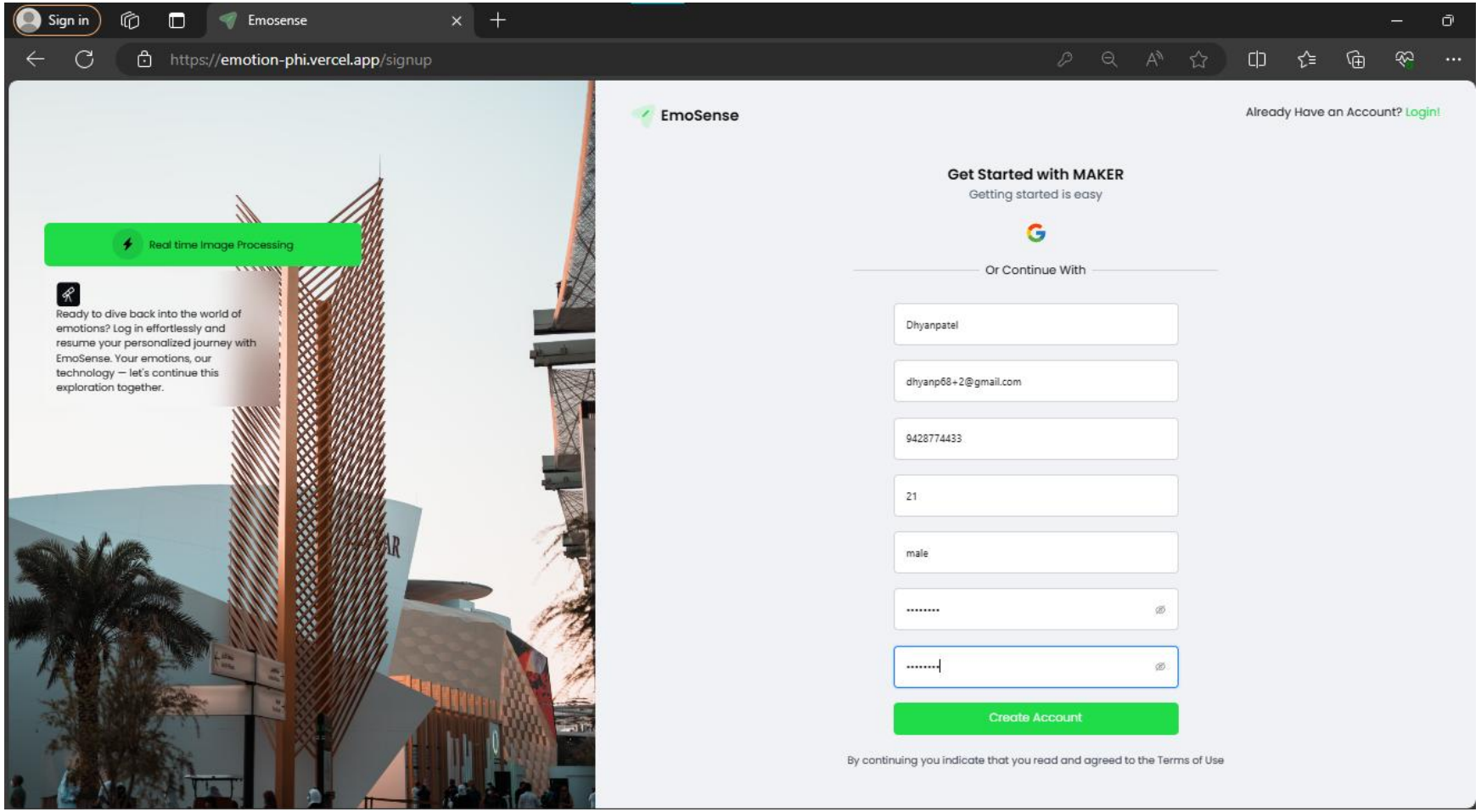
- Flowchart:

  https://drive.google.com/file/d/1-fDIxJ-4U1Hq01tg-rIFwSiaU0cmQknd/view?usp=sharing

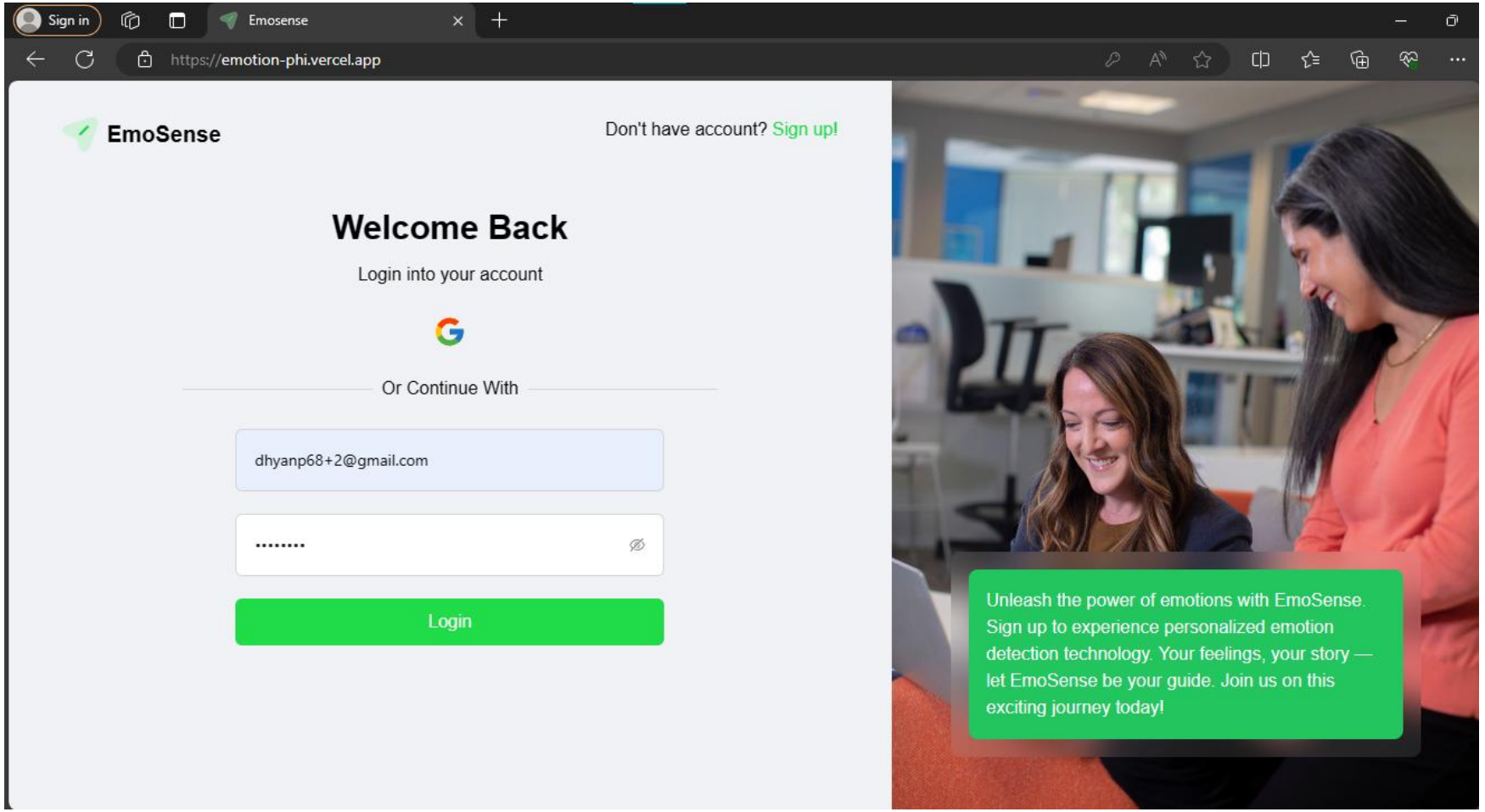
- Algorithm:

  https://drive.google.com/file/d/1JpyTPmZCI_u8u1jFDWjP8yVN4dxjFC2A/view?usp=sharing

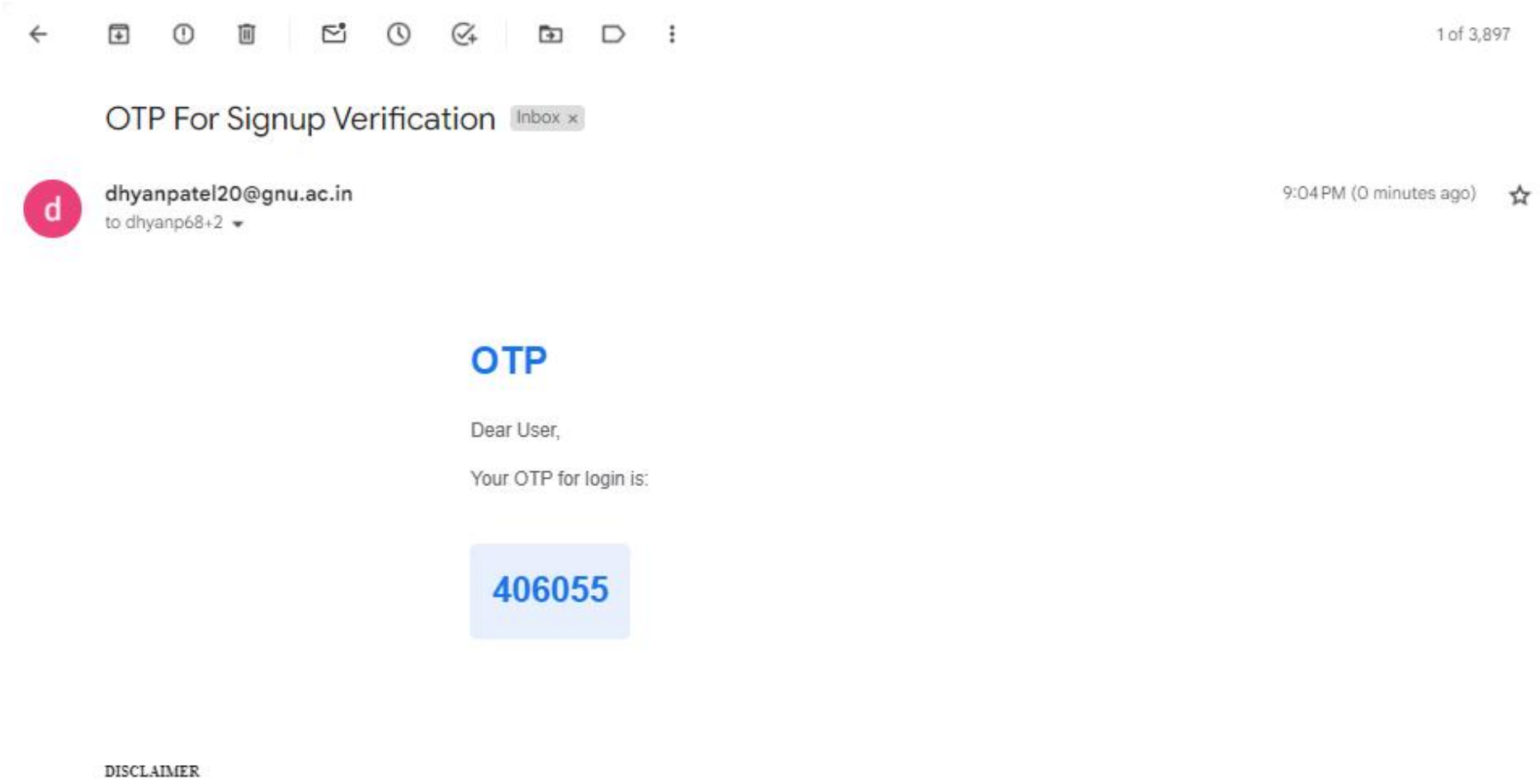
Signup


Sign in
Emosense
https://emotion-phi.vercel.app/signup
Real time Image Processing
Ready to dive back into the world of emotions? Log in effortlessly and resume your personalized journey with EmoSense. Your emotions, our technology — let's continue this exploration together.
EmoSense
Already Have an Account? Login!
Get Started with MAKER
Getting started is easy
Or Continue With
Dhyanpatel
dhyanp68+2@gmail.com
9428774433
21
male
Create Account
By continuing you indicate that you read and agreed to the Terms of Use

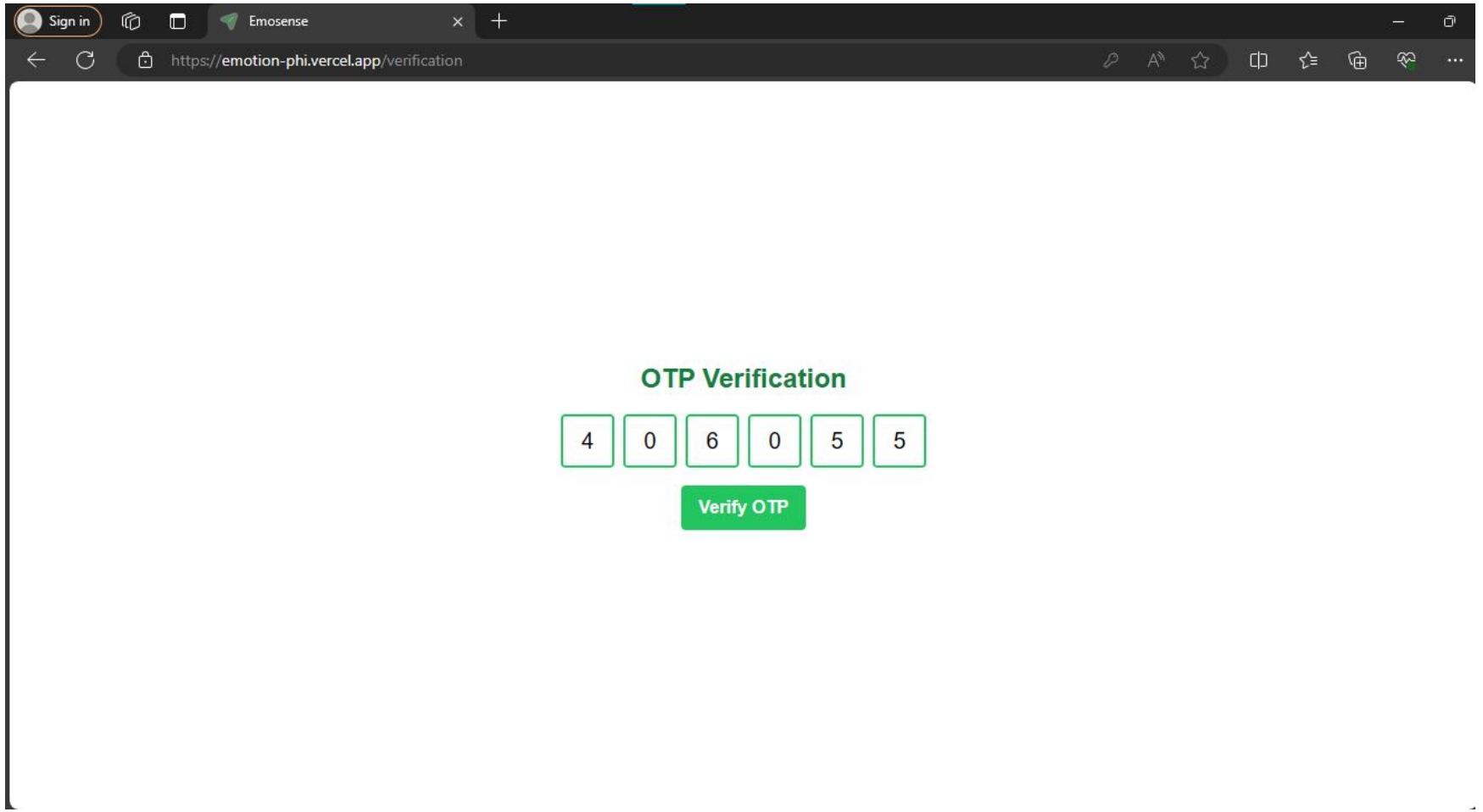
Login


Sign in
Emosense
https://emotion-phi.vercel.app
EmoSense
Don't have account? Sign up!
Welcome Back
Login into your account
Or Continue With
dhyanp68+2@gmail.com
Login
Unleash the power of emotions with EmoSense. Sign up to experience personalized emotion detection technology. Your feelings, your story — let EmoSense be your guide. Join us on this exciting journey today!

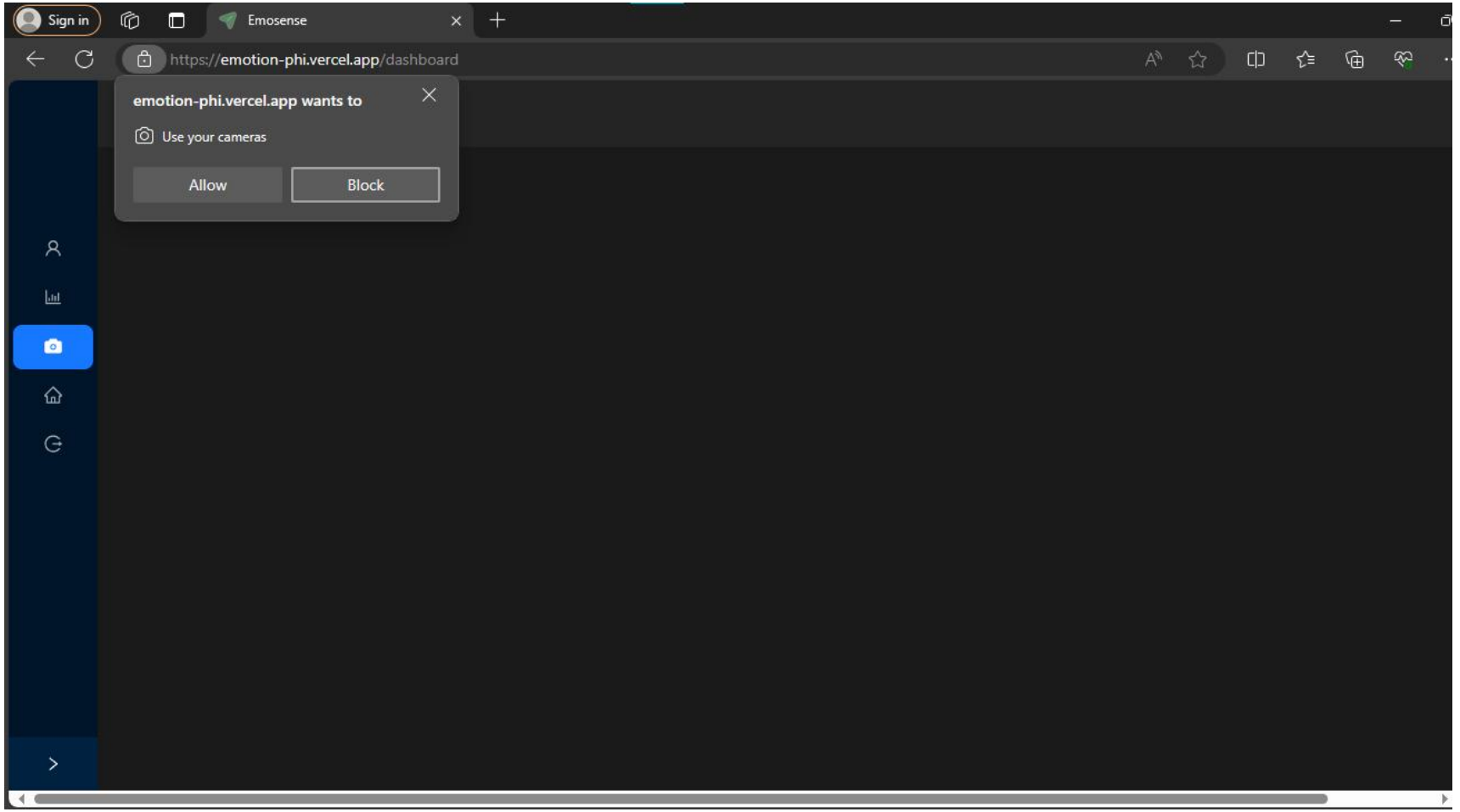
OTP Verification - Email



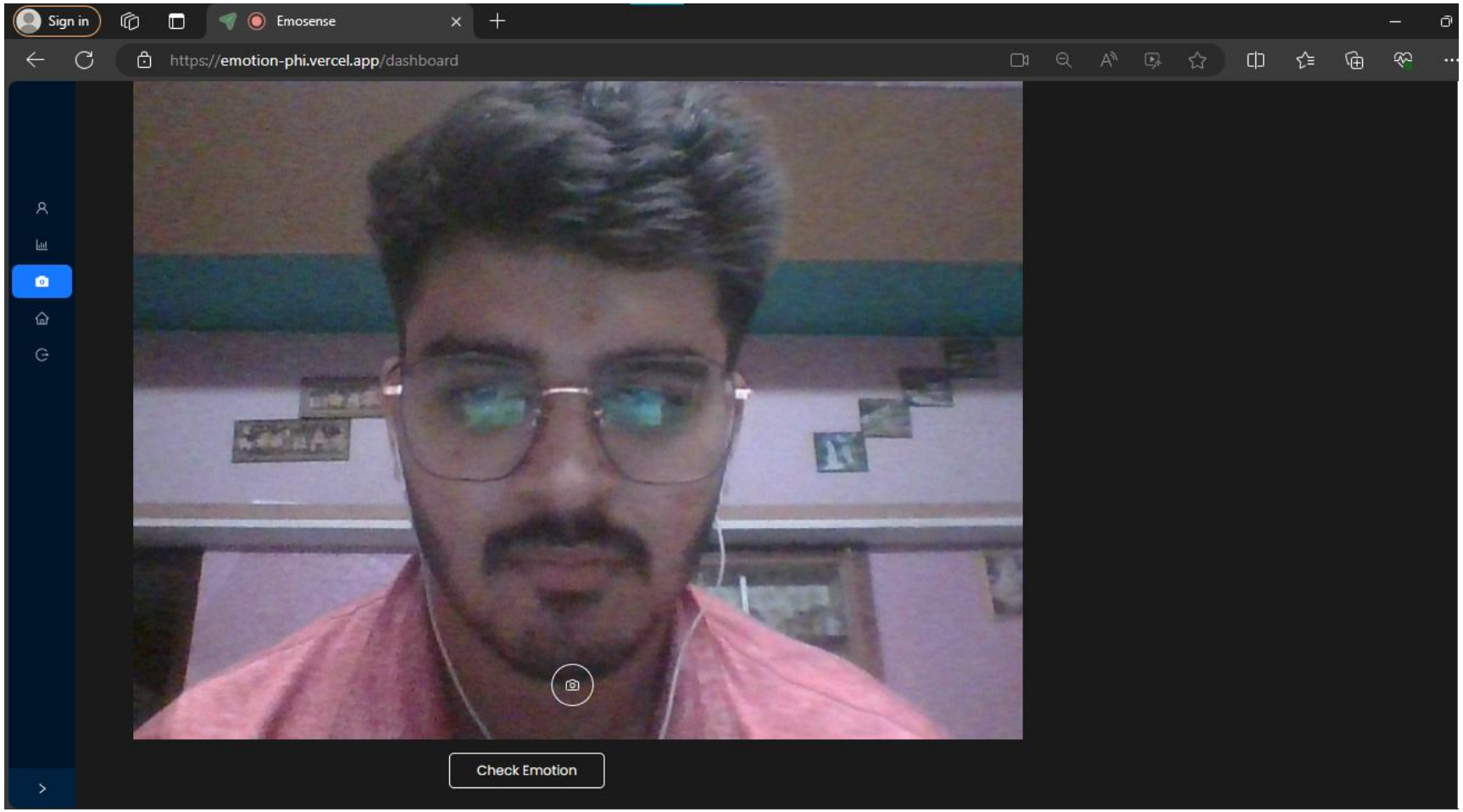
Verification



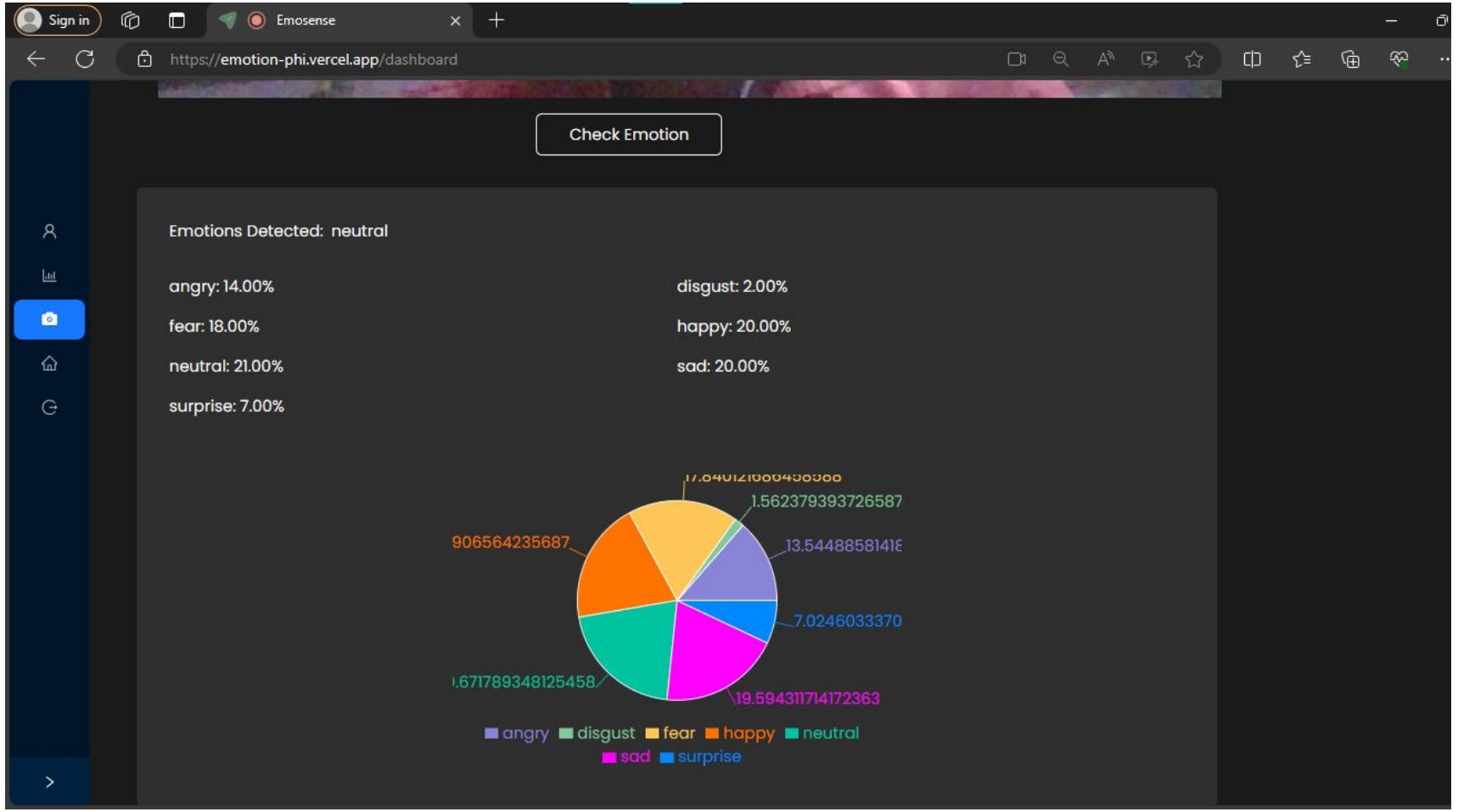
Dashboard


Sign in
Emosense
https://emotion-phi.vercel.app/dashboard
emotion-phi.vercel.app wants to
Use your cameras
Allow
Block

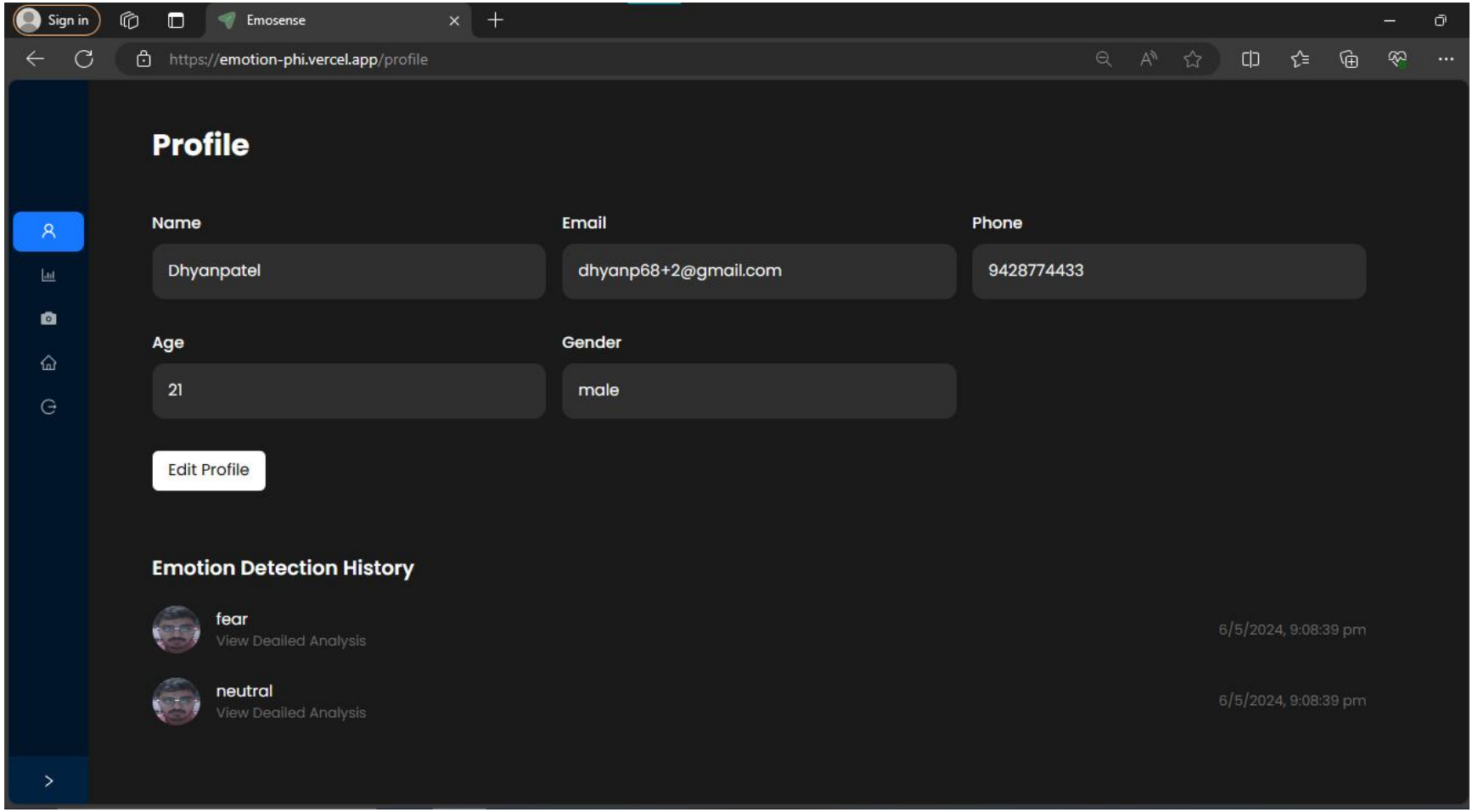
Real-time Emotion Detection



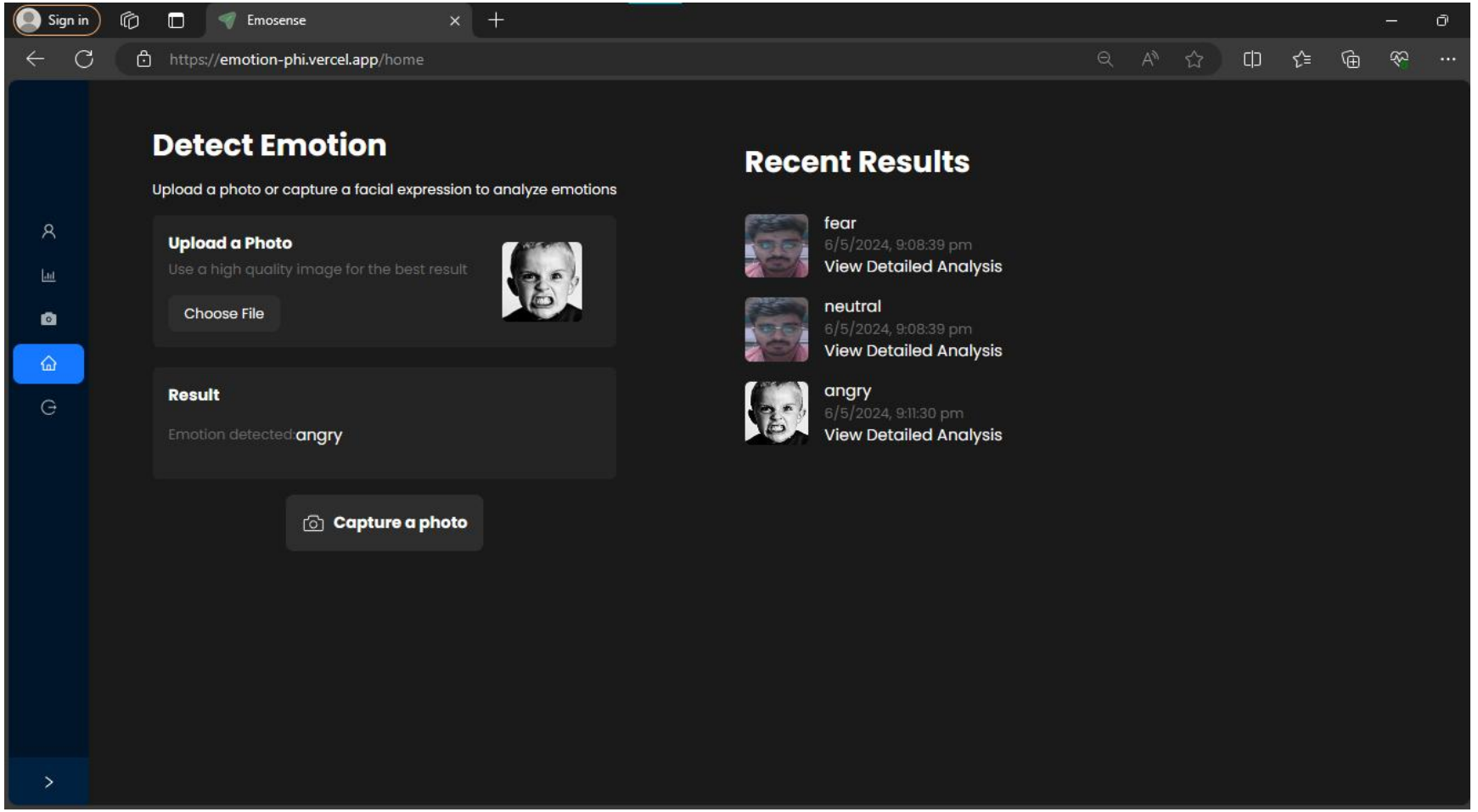
Emotion prediction



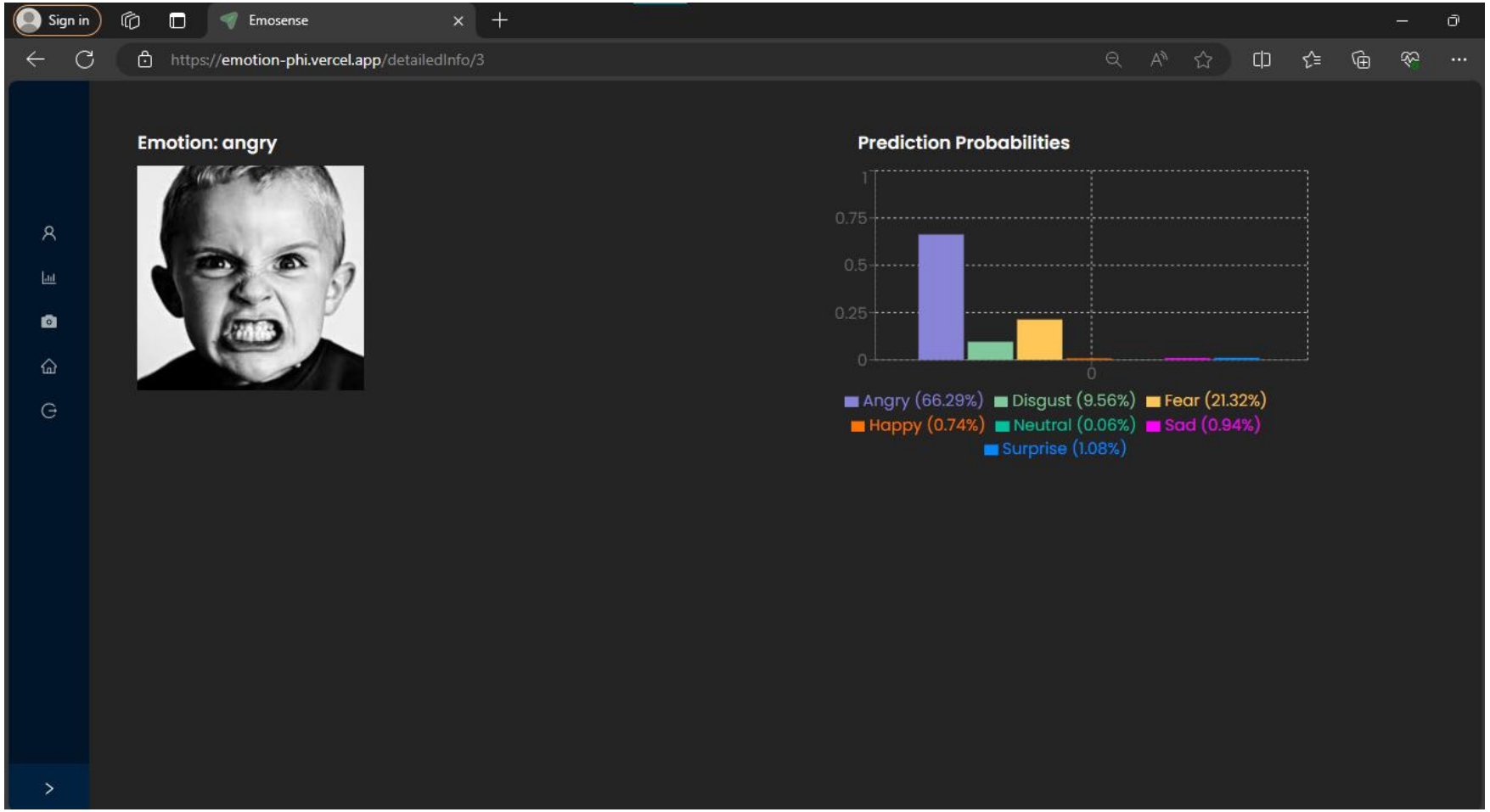
Profile/Edit Profile



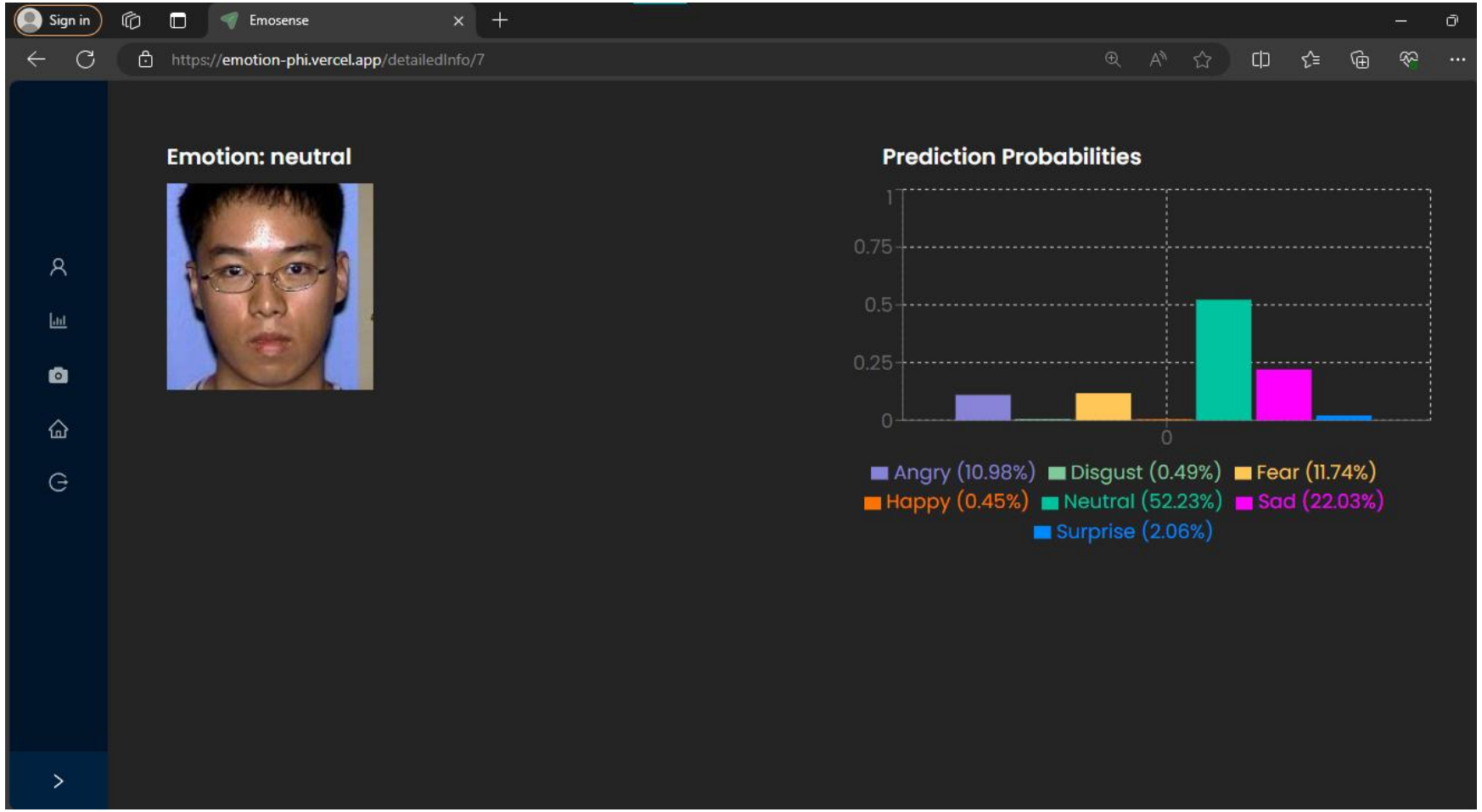
Home Page


Sign in
Emosense
https://emotion-phi.vercel.app/home
Detect Emotion
Upload a photo or capture a facial expression to analyze emotions
Upload a Photo
Use a high quality image for the best result
Choose File
Result
Emotion detected:angry
Capture a photo
Recent Results
fear
6/5/2024, 9:08:39 pm
View Detailed Analysis
neutral
6/5/2024, 9:08:39 pm
View Detailed Analysis
angry
6/5/2024, 9:11:30 pm
View Detailed Analysis

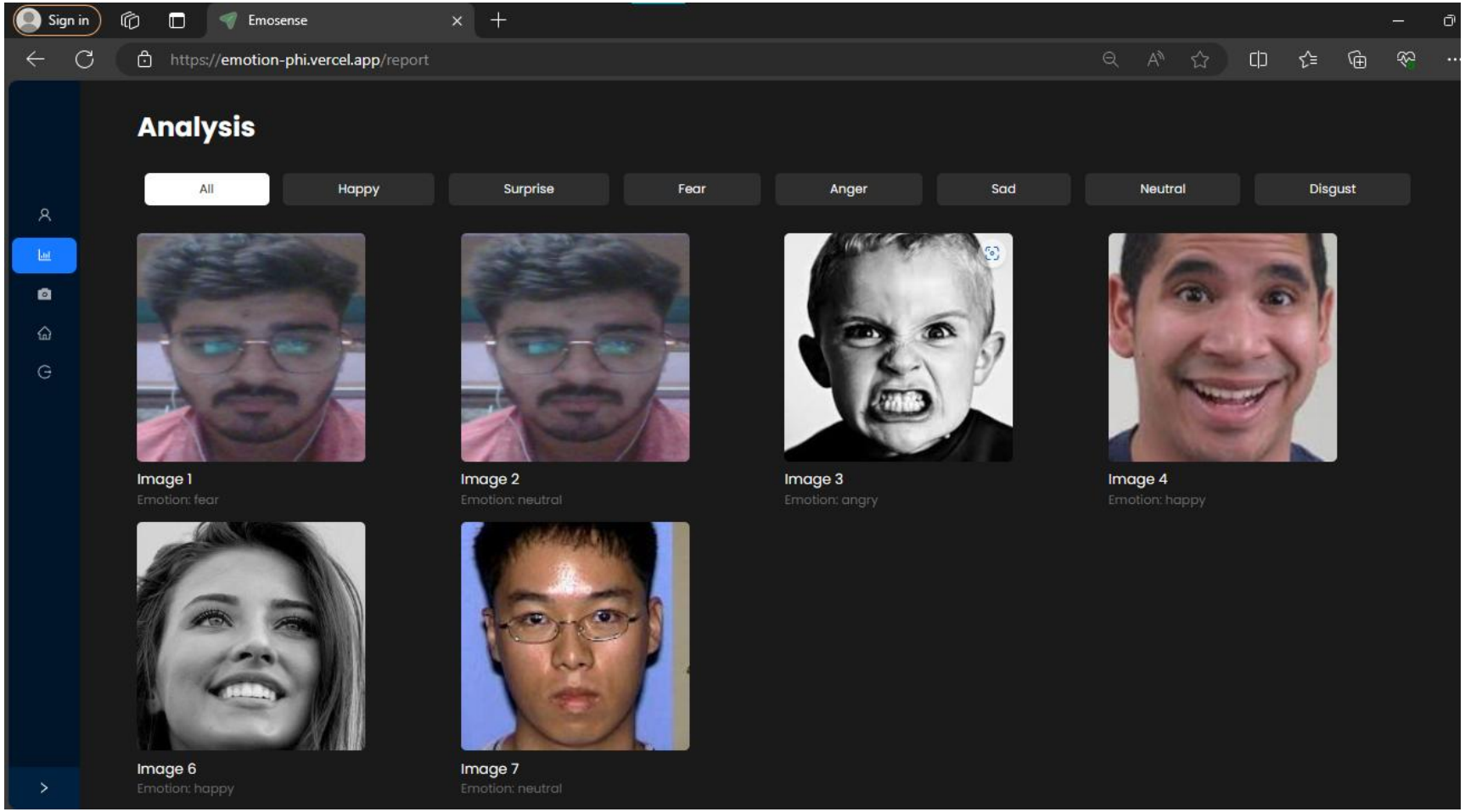
Predicted Probabilities



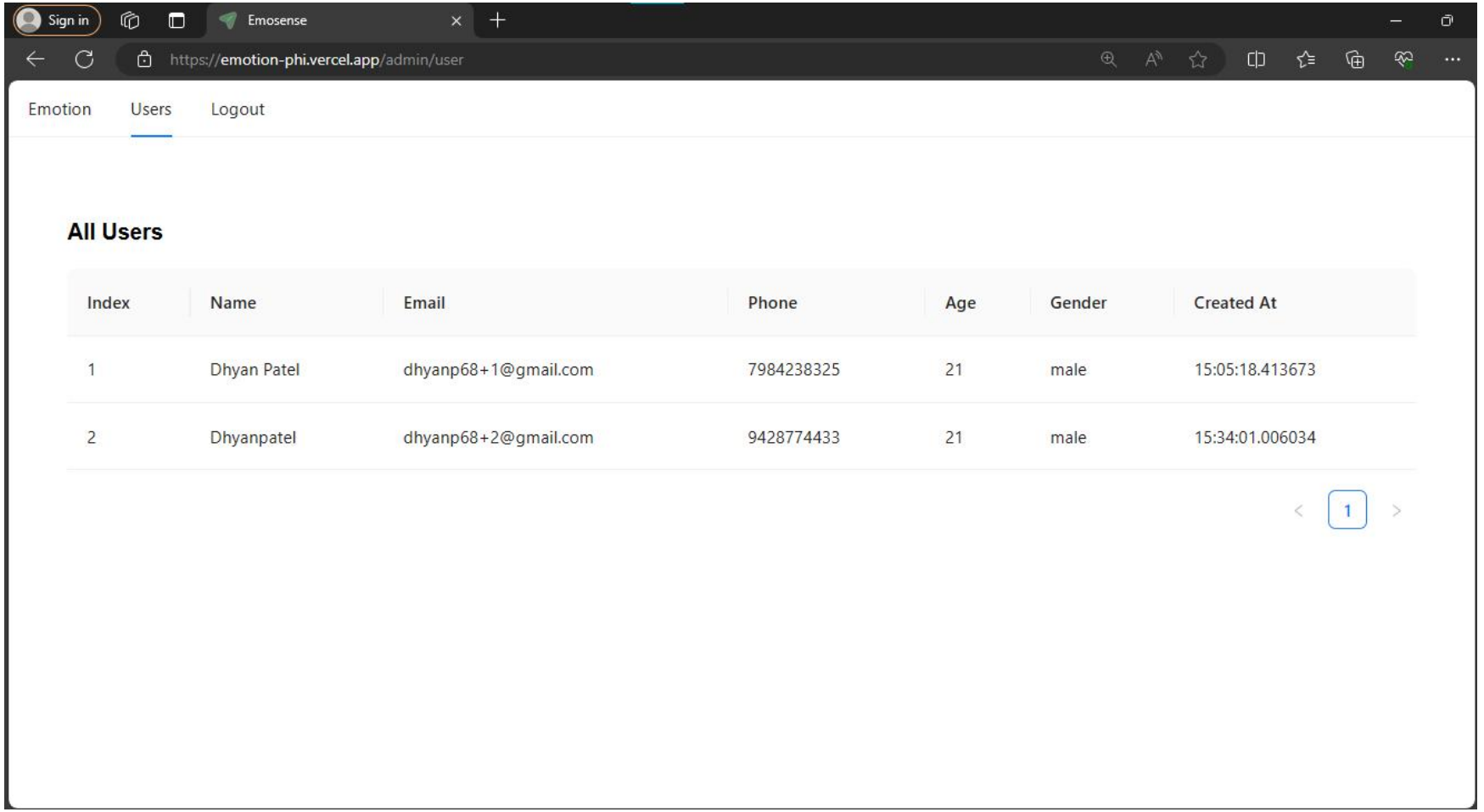
Predicted Probabilities



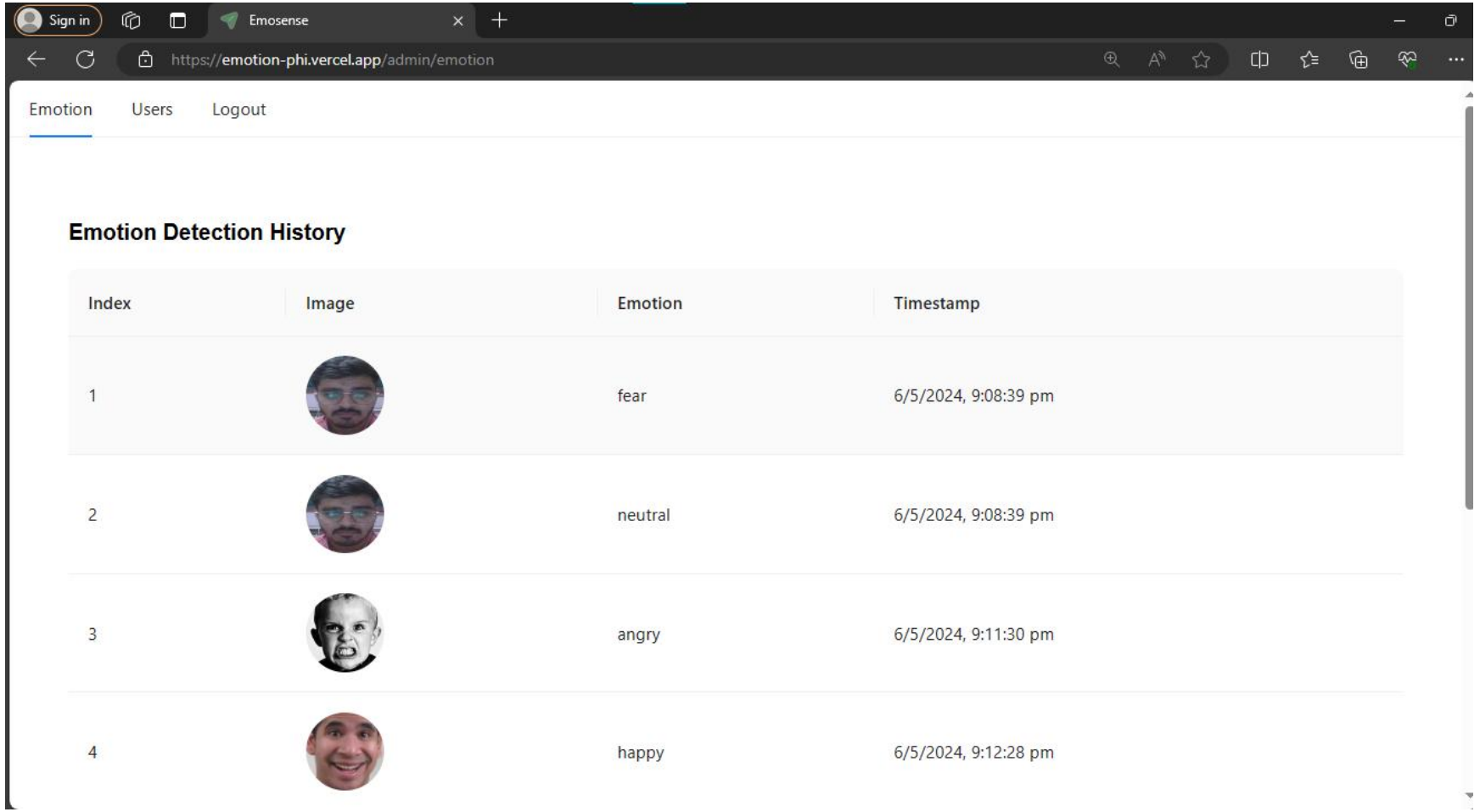
Report Page


Sign in
Emosense
https://emotion-phi.vercel.app/report
Analysis
All
Happy
Surprise
Fear
Anger
Sad
Neutral
Disgust
Image 1
Emotion: fear
Image 2
Emotion: neutral
Image 3
Emotion: angry
Image 4
Emotion: happy
Image 6
Emotion: happy
Image 7
Emotion: neutral

Admin Page


Sign in
Emosense
https://emotion-phi.vercel.app/admin/user
Emotion
Users
Logout
All Users
Index
Name
Email
Phone
Age
Gender
Created At
1
Dhyan Patel
dhyanp68+1@gmail.com
7984238325
21
male
15:05:18.413673
2
Dhyanpatel
dhyanp68+2@gmail.com
9428774433
21
male
15:34:01.006034
1

Admin Page


Sign in
Emosense
https://emotion-phi.vercel.app/admin/emotion
Emotion
Users
Logout
Emotion Detection History
Index
Image
Emotion
Timestamp
1
fear
6/5/2024, 9:08:39 pm
2
neutral
6/5/2024, 9:08:39 pm
3
angry
6/5/2024, 9:11:30 pm
4
happy
6/5/2024, 9:12:28 pm

Conclusion

- In Conclusion, the project concludes that utilizing machine learning for facial expression emotion detection is viable, with applications in human-computer interaction and mental health. Ongoing improvements are crucial for enhancing accuracy and real-world usability.

References

- Kaggle
- AI Applications
- GitHub
- stack overflow

Thank You !!