



Skillscape

Your Escape From Regular Virtual Classes

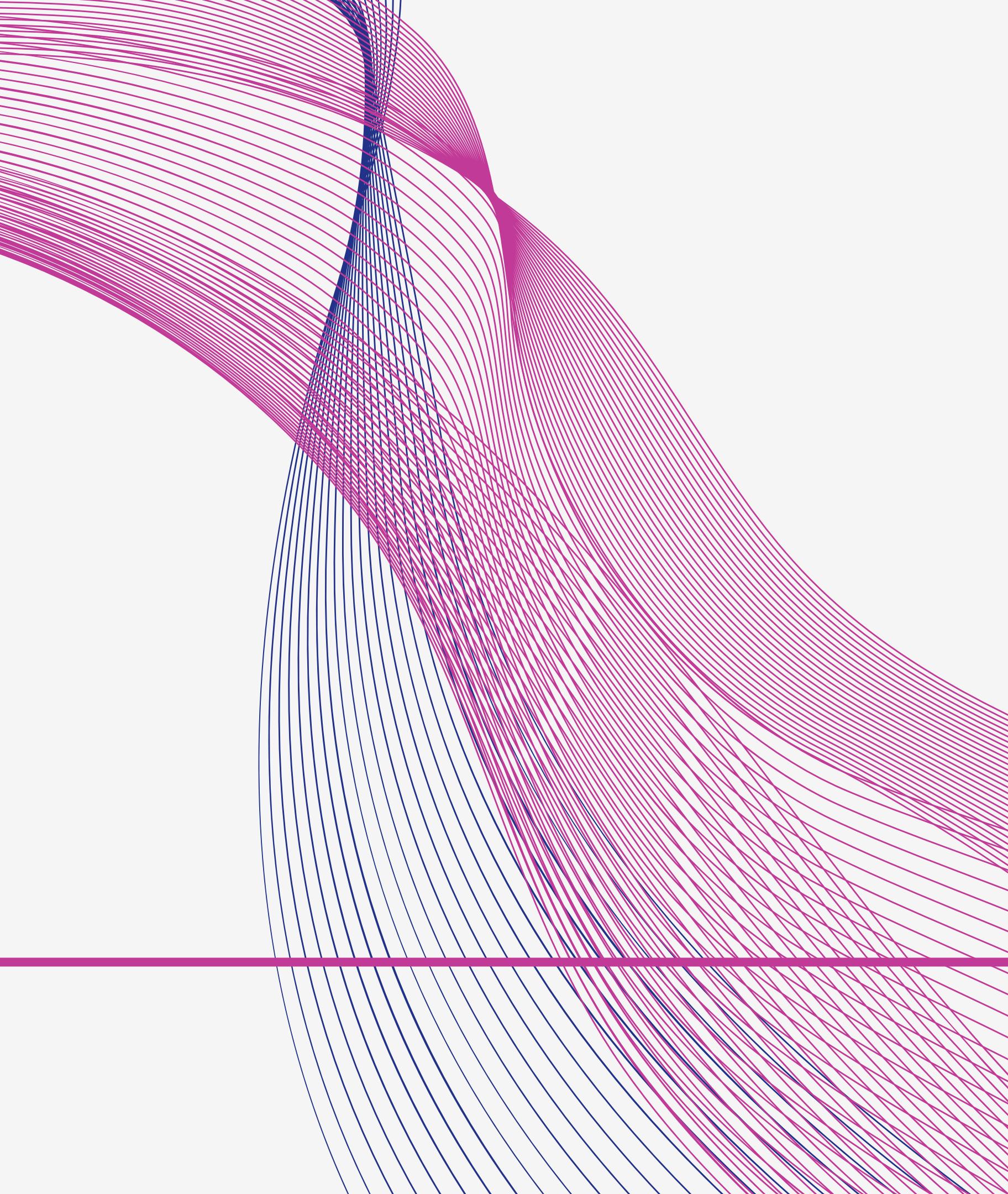
A TensionFlow PROJECT

Abhay Mathur - ML, Backend

Shreya Shah - ML, Frontend, UI/UX

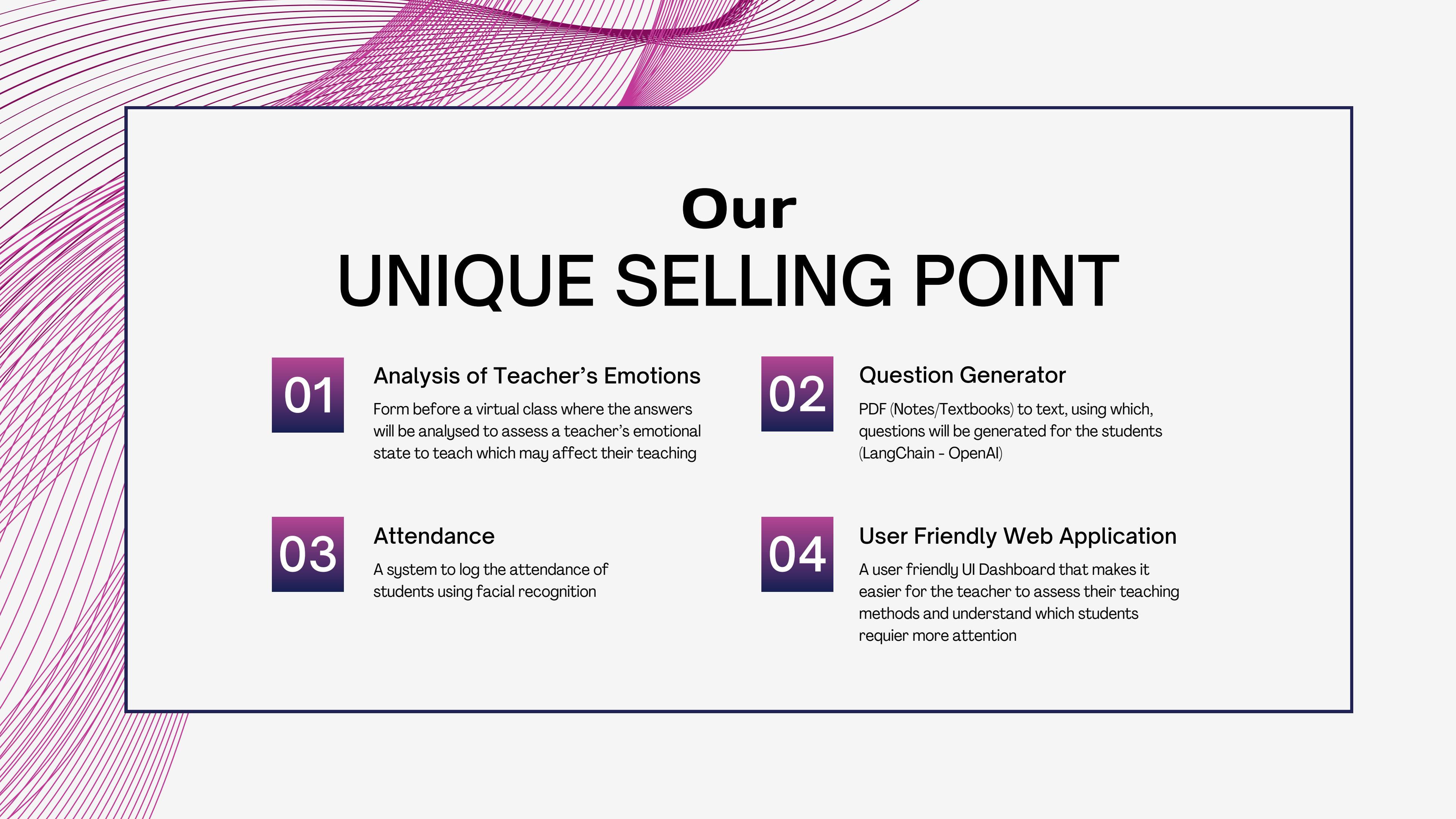
Deepika Mucchala - Backend, ML

Shruti Shah - Full Stack, ML



PROBLEM STATEMENT

A multi-modal emotion recognition for a Virtual Classroom Environment where a student's emotions are classified using Video, Audio and Text into classes like confusion, engagement, frustration, excitement, etc



Our UNIQUE SELLING POINT

01

Analysis of Teacher's Emotions

Form before a virtual class where the answers will be analysed to assess a teacher's emotional state to teach which may affect their teaching

02

Question Generator

PDF (Notes/Textbooks) to text, using which, questions will be generated for the students (LangChain - OpenAI)

03

Attendance

A system to log the attendance of students using facial recognition

04

User Friendly Web Application

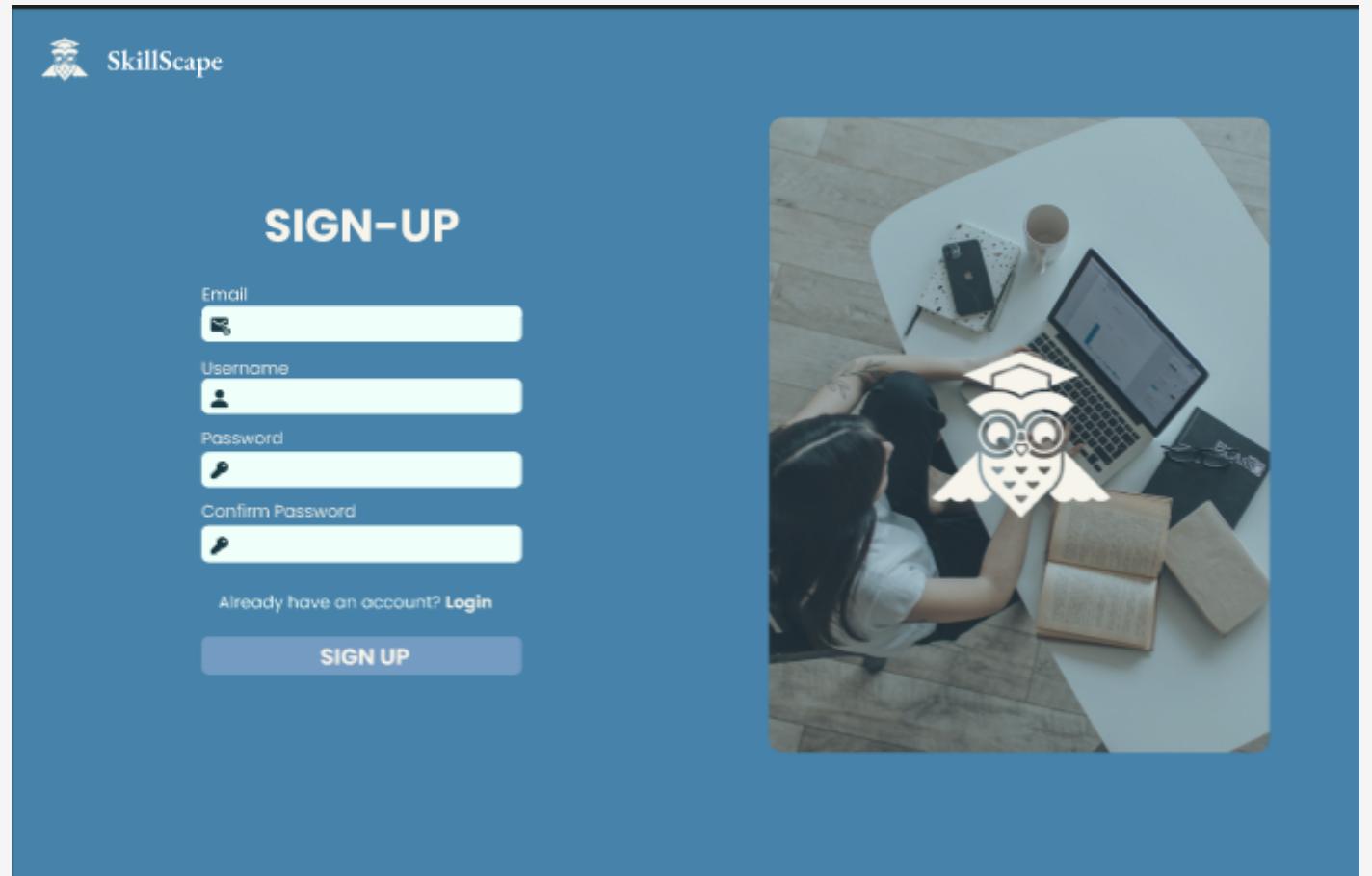
A user friendly UI Dashboard that makes it easier for the teacher to assess their teaching methods and understand which students requier more attention

Working of FRONTEND

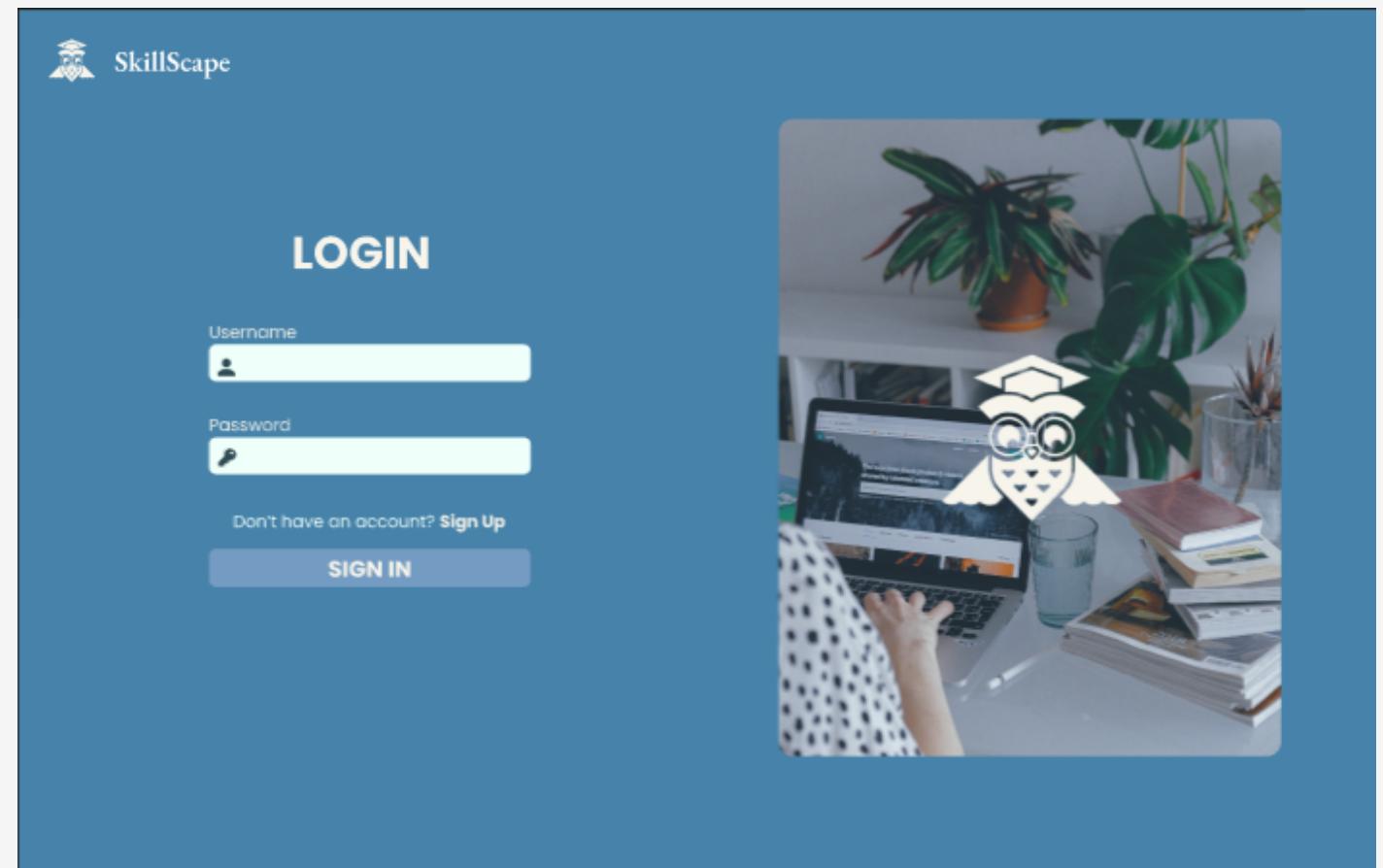
Login and Signup pages lead to a Dashboard.

On this dashboard, the teacher will be able to see

- No. of lectures completed in the week
- Average Interaction in all classes in that week
- Class-Wise Interactions
- Profile
- List of Lectures that week, on clicking opens the form to the meeting (ZegoCloud)
- Class-Wise analysis of attendance and of each student's % attention and warnings for distractions/confusions and such negative emotions.



The sign-up page for SkillScape features a blue header with the SkillScape logo and a graduation cap icon. Below the header, the word "SIGN-UP" is prominently displayed in white capital letters. The form consists of four input fields: "Email" (with an envelope icon), "Username" (with a person icon), "Password" (with a lock icon), and "Confirm Password" (with a lock icon). Below the password fields is a link "Already have an account? [Login](#)". At the bottom right is a blue "SIGN UP" button. To the right of the form is a photograph of a person sitting at a desk with a laptop, books, and a cup, with a cartoon owl overlay.



The login page for SkillScape features a blue header with the SkillScape logo and a graduation cap icon. Below the header, the word "LOGIN" is prominently displayed in white capital letters. The form consists of two input fields: "Username" (with a person icon) and "Password" (with a lock icon). Below the password field is a link "Don't have an account? [Sign Up](#)". At the bottom right is a blue "SIGN IN" button. To the right of the form is a photograph of a person sitting at a desk with a laptop, books, and a potted plant, with a cartoon owl overlay.

Application FLOW

Dashboard - Meeting

The dashboard redirects the teacher to a form with a few questions where an NLP sentimental analysis is run to judge their emotional state for teaching.

Form - Meeting

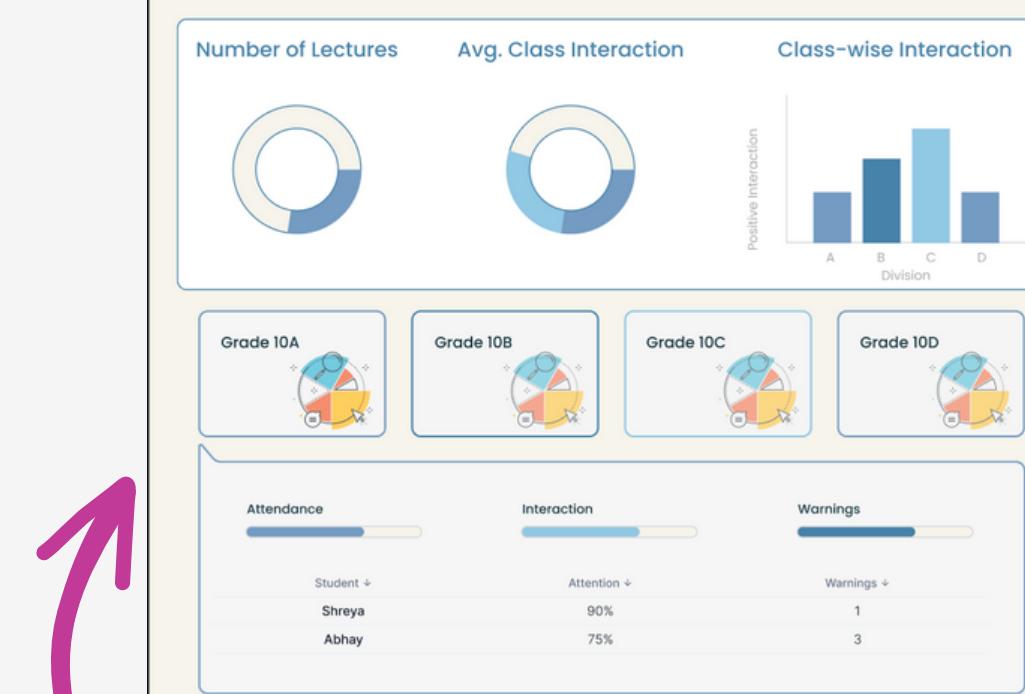
The form then leads the teacher to a meet with audio and video inputs.

Meeting - Models

There are 3 models running when a student joins a meeting to classify his emotional state using their Video, Audio and Speech in real time so the teacher knows how to alter their teaching methods on the spot.

Models - Backend

The collected data about the student's emotional state is stored for a final analysis.



Prof. Shruti Shah
H.O.D. Mathematics

Lectures This Week

- Grade 10 A - Math 8:00 A.M. Monday, 29th Sept.
- Grade 10 B - Math 9:00 A.M. Tuesday, 29th Sept.
- Grade 10 C - Math 10:00 A.M. Wednesday, 29th Sept.
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Grade 10 A - Math
8:00 A.M. Monday, 18th Sept.

Grade 10 B - Math
8:00 A.M. Monday, 18th Sept.

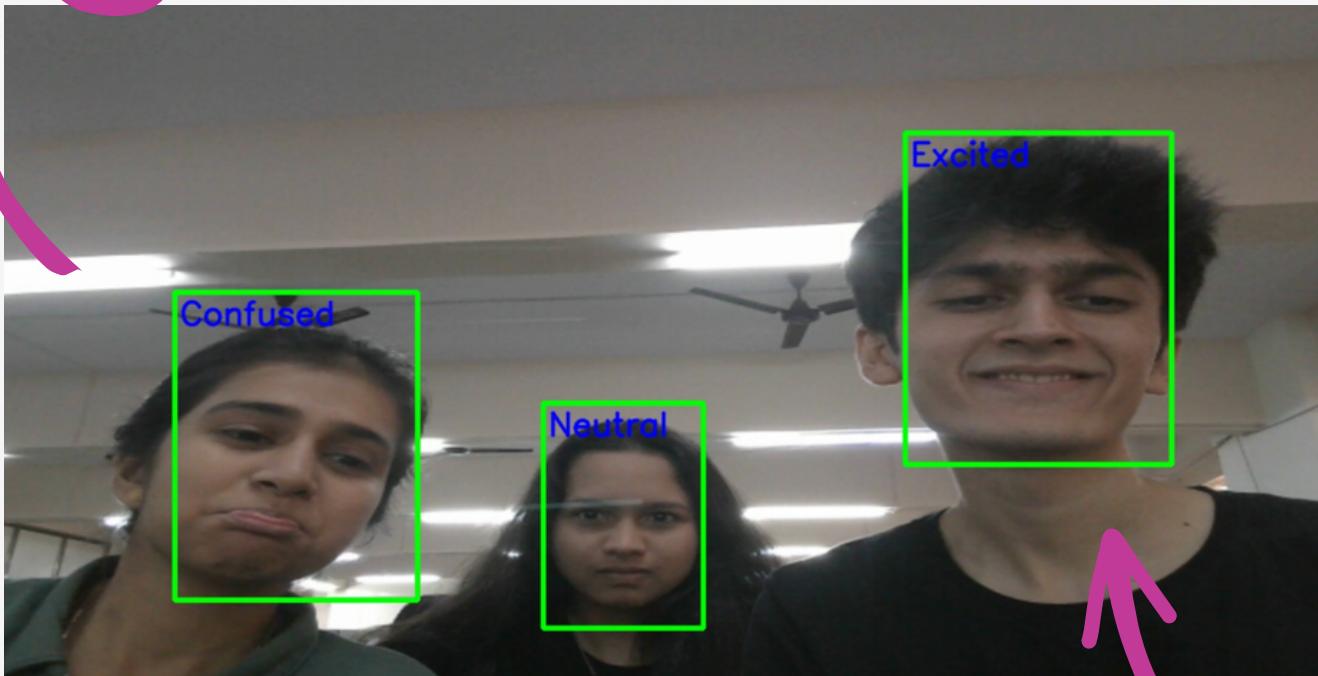
Grade 10 C - Math
8:00 A.M. Monday, 18th Sept.

Grade 10 D - Math
8:00 A.M. Monday, 18th Sept.

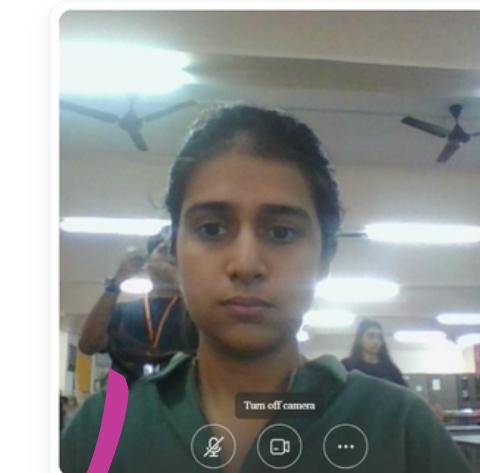
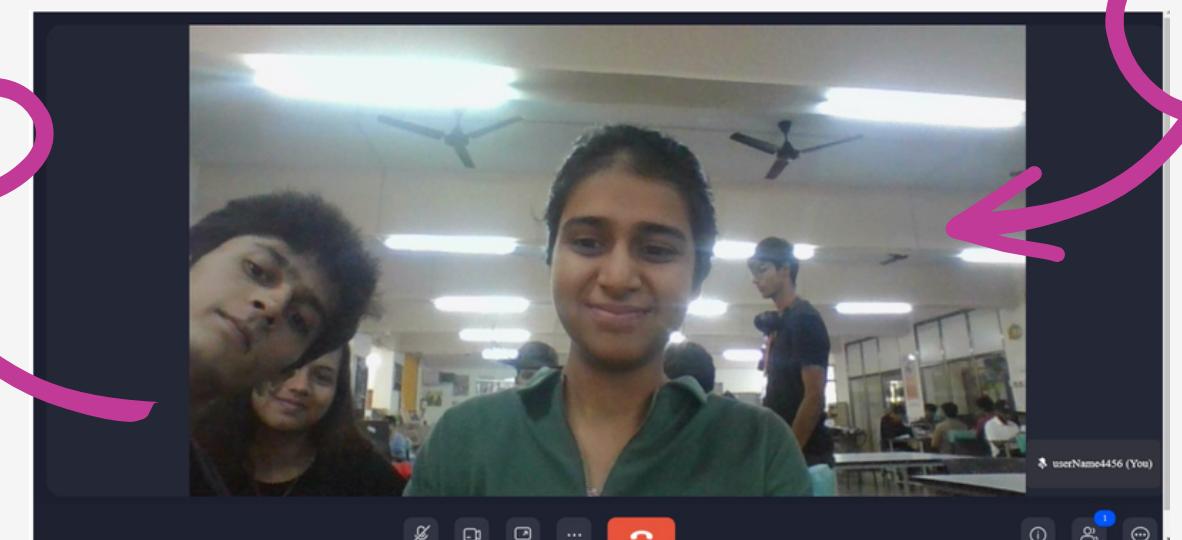
Grade 10 E - Math
8:00 A.M. Monday, 18th Sept.

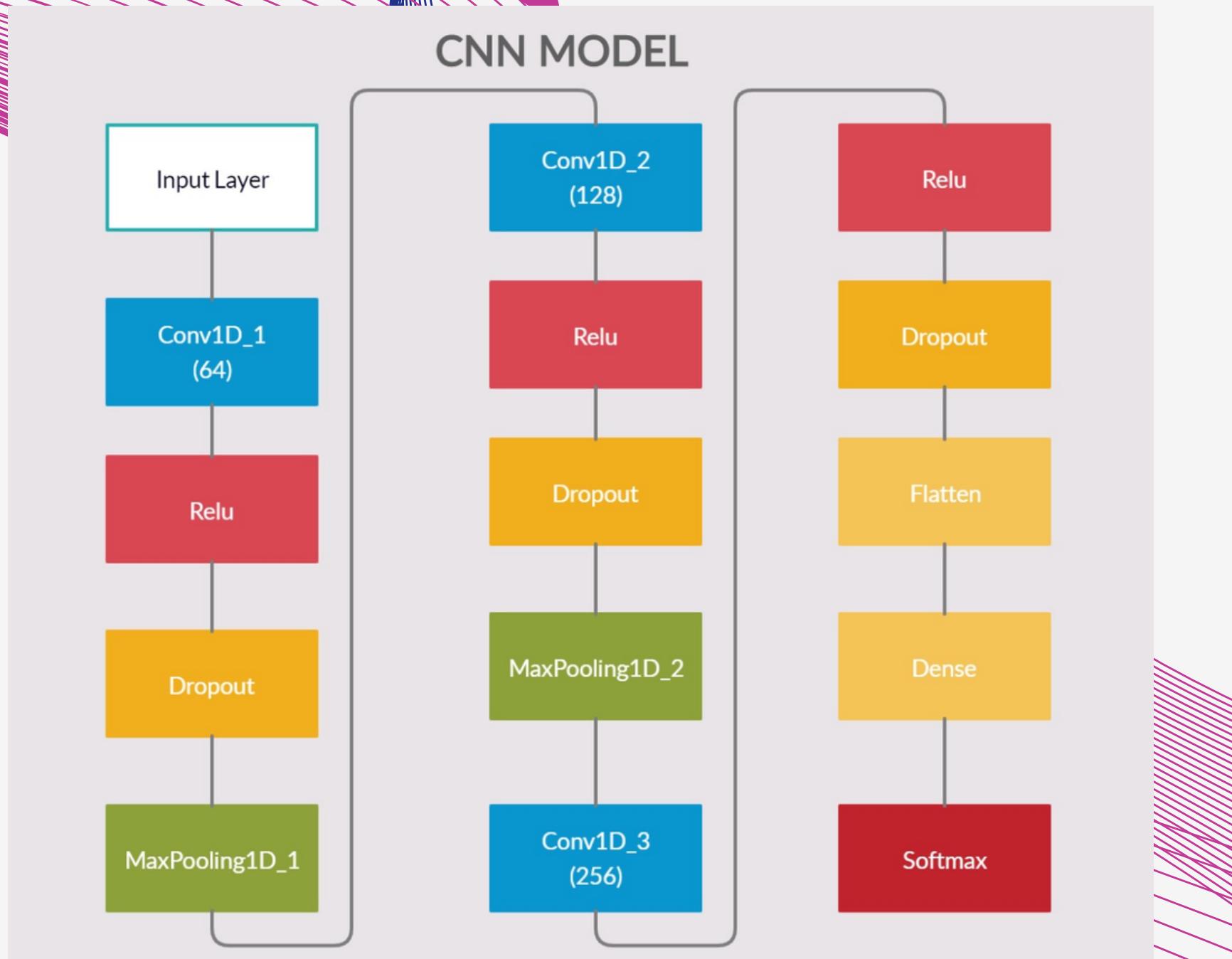
Please answer these!

1. Please briefly describe your current emotions or thoughts as you prepare for this class.
2. How would you describe your mood before this class?
 Excited Neutral Anxious
3. How do you feel about the upcoming class?
 Eager Indifferent Stressed
4. Is there anything specific on your mind that might affect your teaching approach today? Please share any concerns or excitement you may have.
5. On a scale of 1 to 5, with 5 being extremely positive and 1 being extremely negative, how would you rate your mood right now?
 1 2 3 4 5

Join Meeting

SkillScape





MODELS USED

Video: CNN, A custom built sequential Model

Audio: CNN, MLP Classifier

Text: Pretrained emoRoBERTa

BUSINESS PROSPECTS



Mental Health and Well-being Support

SkillScape can be used to monitor students' emotional well-being and provide support when signs of distress are detected. This can contribute to a healthier and more positive learning environment



Partnerships with Educational Institutions and Organizations

Collaboration with schools, colleges, and educational organizations can lead to institutional adoption of the platform, potentially on a larger scale



Subscription Models and Premium Features

SkillScape could offer free basic services like video, audio and text analysis, and charge for premium features such as attendance log and Question Bank Generator

FUTURE PROSPECTS

Proctoral System

An automated proctor that detects the presence or absence of the student in front of the computer, and gives warnings every time they are absent (attendance model can me modified for this)

Quiz after every lecture

After every lecture, a few questions can be formulated from the transcript of the lecture (speech-to-text) using a model similar to the one we used for our PDF to Question Bank conversion.



SkillScape

THANK YOU