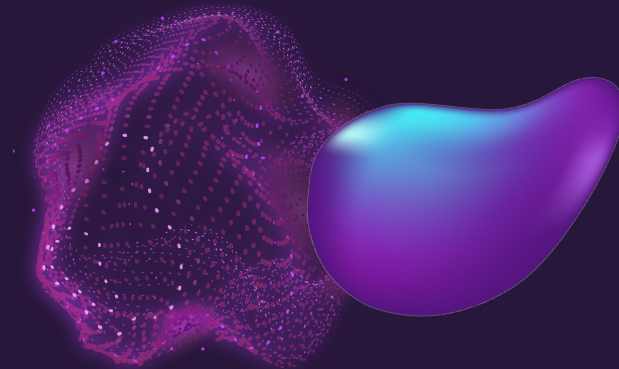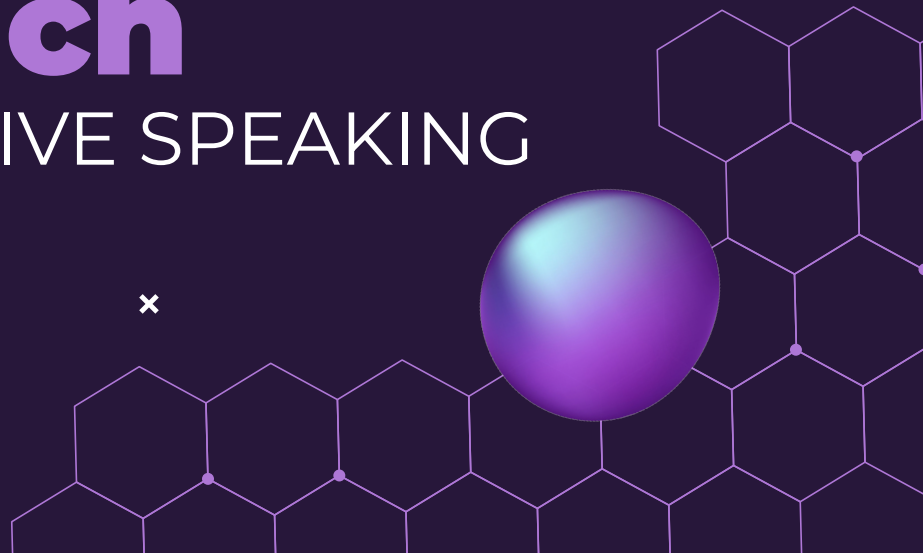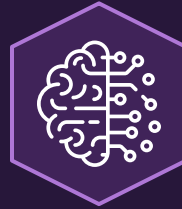# SpeechCoach

YOUR KEY TO EFFECTIVE SPEAKING

PROBLEMS

Technology

In an era where communication occurs mostly online, students are less comfortable with face-to-face interactions

Opportunity

Opportunities to speak in public or hone effective speaking skills are hard to come by

Fear

Innate fear of judgement or failure may discourage students from speaking or reaching out to mentors to help them practice speaking

WHAT IF WE CAN PRACTICE PUBLIC SPEAKING AND IMPROVE ON OUR SPEAKING SKILLS WITHOUT THE FEAR OF JUDGEMENT?

OUR PRODUCT

SpeechCoach is an AI-powered app that assists, evaluates and monitors the skill of effective speaking

OUR FEATURES

Face and Posture

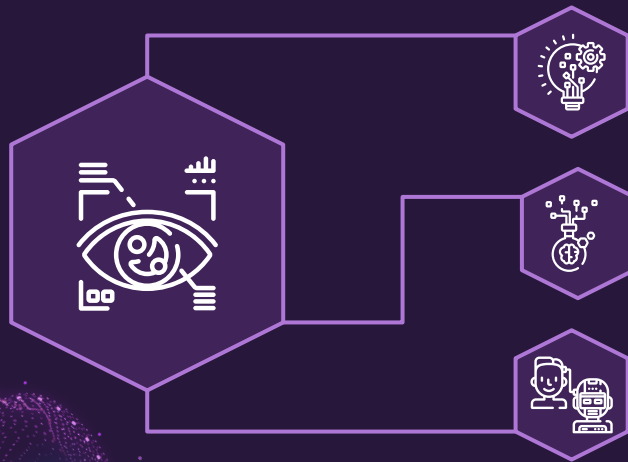Detect and evaluate facial expression and posture of speakers

Voice

Perform sentiment analysis on verbal inputs to measure confidence, preparedness, etc.

POTENTIAL USE CASES

Public Presentations

Evaluate student performance
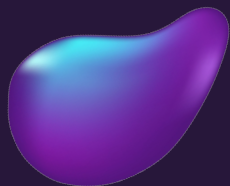
Practice Sessions

Give feedback to student

Interviews

Evaluate candidate performance

MODELS

Head Pose Estimation

- Real-time gaze detector for tracking eye movement
- Utilizes pre-trained **Facial Landmark Detection Model**

Speech Emotion Recognition

- **Wav2Vec** Model for detecting emotions through speech
- **Range of emotions** 'angry', 'calm', 'disgust', 'fearful', 'happy', 'neutral', 'sad', 'surprised'
- **Transfer learning** fine-tuned version of pre-trained model in the HuggingFace library
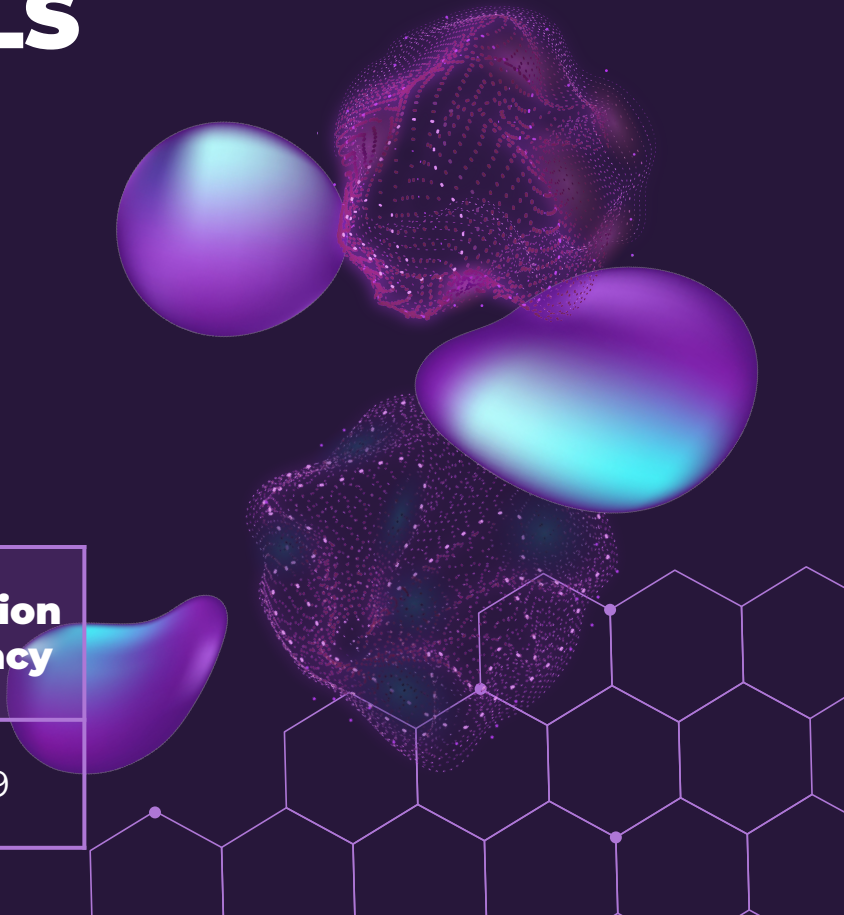- **Pre-trained model** *ehcalabres/wav2vec2-lg-xlsr-en-speech-emotion-recognition*

MODELS

Yamnet
- Pre-trained neural network for sound classification based on **Fourier Transform**
- **Transfer learning** fine-tuned version of pre-trained YAMNet model in Tensorflow Hub
- **Not used in production** due to poor performance

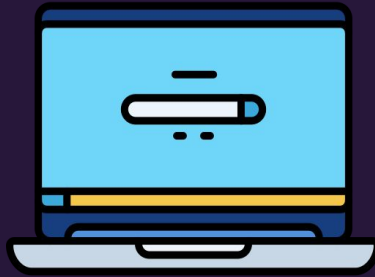| Train Loss	Train Accuracy	Validation Loss	Validation Accuracy
1.18	0.525	1.23	0.489

ARCHITECTURE

Upload
Video

Supports Multiple Formats:
MP4,WMV,MOV,AVI,MKV

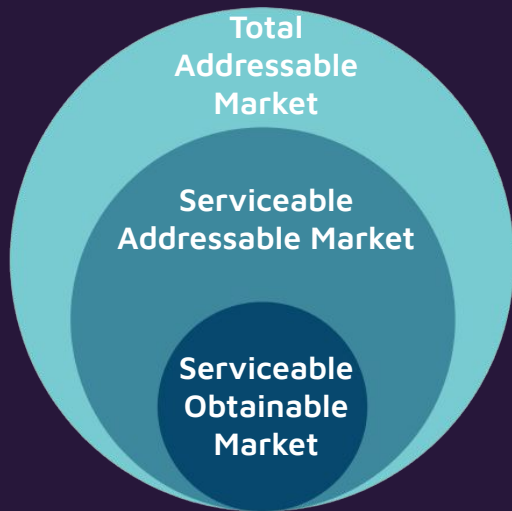Return analysis
output

Analyze Video

Speech Emotion
Detection

Face Tracking

ADDRESSABLE MARKETS

Total Addressable Market

Serviceable Addressable Market

Serviceable Obtainable Market

$123.4 B	**TAM**	Global EdTech Market
$1.96 B	**SAM**	SEA EdTech Market
$460 M	**SOM**	Singapore EdTech Market

Students   **Institutions**   **Businesses**

SWOT ANALYSIS

Strength

All-in-one application for individuals to practice public speaking and identify areas of improvements

Weakness

AI-based performance evaluation ultimately cannot fully replace human judgement
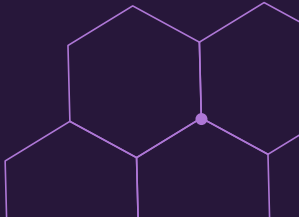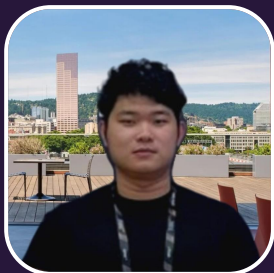
Opportunities

Can be integrated into existing educational programs + increased interest in public speaking from institutions and individuals

Threats

Institutions may not fully trust the accuracy of feedback provided by AI

OUR TEAM

Shi Jie

Year 3 NUS Business Analytics
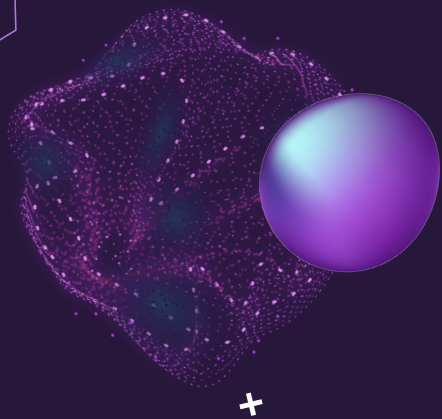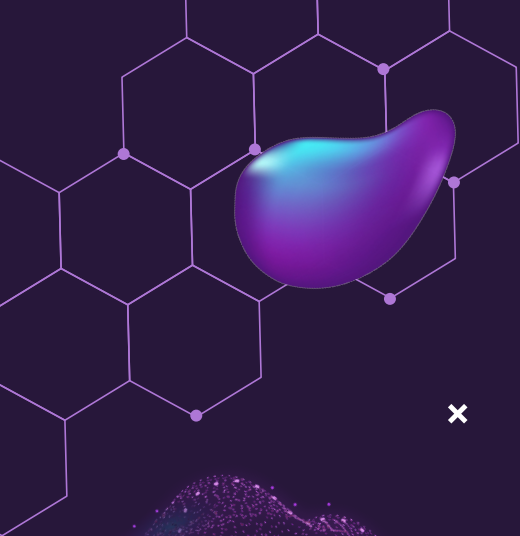
Daniel

Year 3 NUS Business Analytics and Economics

Samuel

Year 1 NUS Biomedical Engineering

Yang Yee

Year 3 NUS Business Analytics

THANKS!