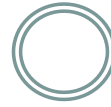# ADVANCED AI AND APPLICATION

MULTIMODAL FACE–VOICE RECOGNITION SYSTEM

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ROBOTICS AND AI

Multimodal Face – Voice Recognition System

- The Multimodal Face–Voice Recognition System is an advanced AI-driven biometric authentication framework that utilizes deep learning to ensure secure and accurate identity verification.

- By integrating both facial recognition and voice authentication

- It significantly enhances security and reliability, outperforming traditional unimodal authentication methods.

MODELS

1. Face Recognition Model

o MTCNN → Detects and aligns faces.

o VGGFace2 (InceptionResNetV1) → Extracts deep face embeddings for recognition.

2. Voice Recognition Model

o MFCC / Spectrogram Features → Extracts key voice characteristics.

o Wav2Vec2 / DeepSpeaker → Identifies and verifies speakers.

3. Fusion Model (Multimodal)

o Feature-Level Fusion → Combines face + voice embeddings for final authentication.

APPLICATIONS

o Smartphone & Device Authentication

o Banking & Financial Transactions

o Border Security & Immigration

o Healthcare & Patient Identification

o Secure Access Control

THANK YOU