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Final Project

PROJECT TITLE

HAND GESTURE RECOGNITION

AGENDA

- Problem statement
- Project overview
- Solution
- Modeling
- Results

PROBLEM STATEMENT

When people have trouble communicating verbally because of speech impairments or language obstacles, an augmented communication hand gesture detection system can be quite helpful. The goal is to create a simple interface that will allow nonverbal people—such as those with speech impairments or low language skills—to communicate successfully with hand gestures. To enable smooth interpersonal communication, the system should precisely recognize a predetermined set of hand gestures and convert them into matching textual or auditory outputs.

PROJECT OVERVIEW

This project aims to create a hand gesture recognition system using OpenCV and MediaPipe, enabling real-time interpretation of hand movements captured through a webcam

- Capture video frames from a webcam or input video source using OpenCV
- Utilize the MediaPipe Hand Detection model to identify and localize hand regions within the video frames
- Display the video feed with overlaid hand landmarks and recognized gestures in real-time using OpenCV.

WHO ARE THE END USERS?

It is still possible to create an accessible and user-friendly hand gesture detection system even when taking into account users who could have cognitive impairments or difficulties.

- Individuals with Intellectual Disabilities
- Children with Learning Disabilitie
- Elderly Individuals

YOUR SOLUTION AND ITS VALUE PROPOSITION

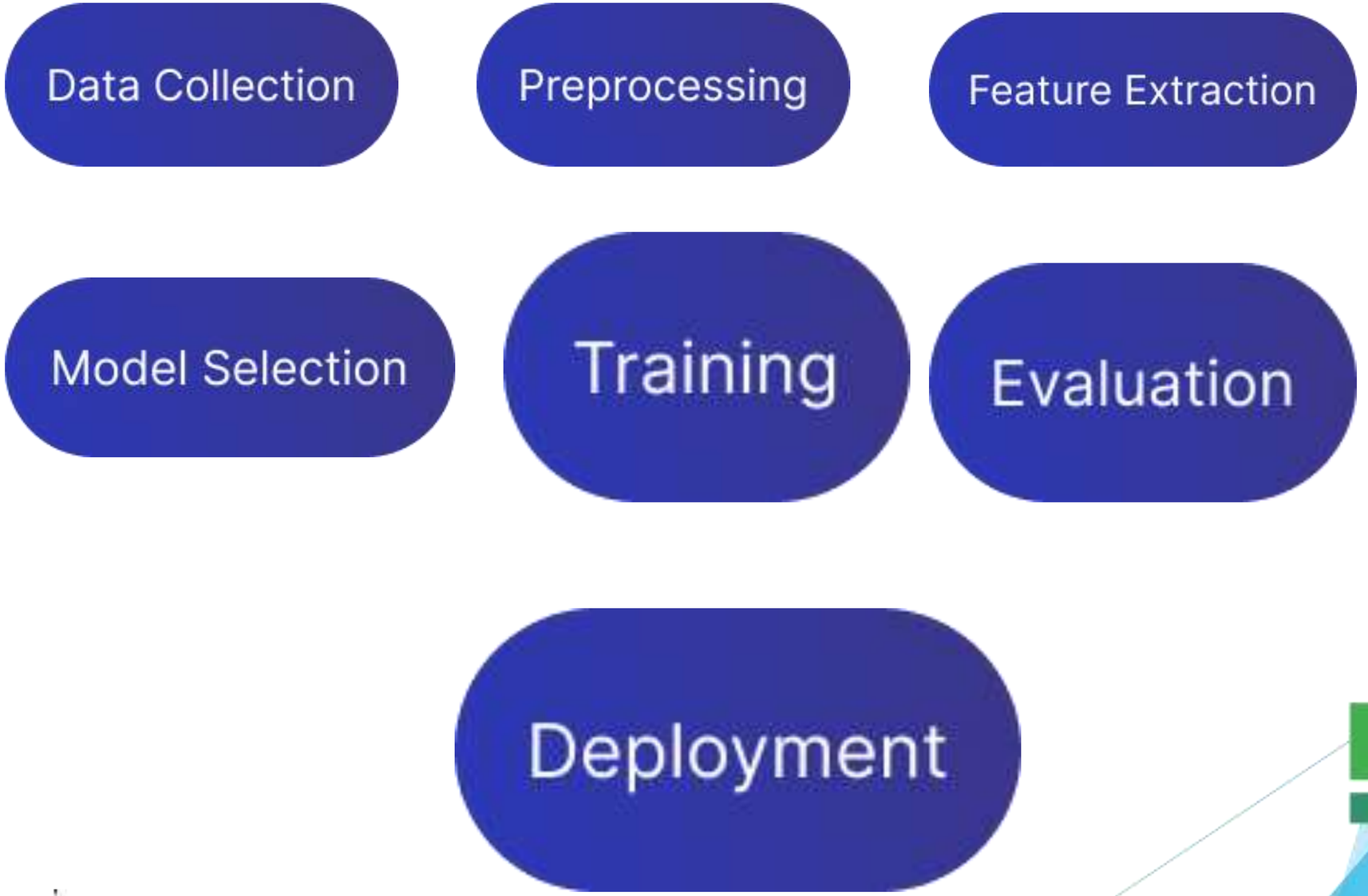
Our solution is a user-friendly hand gesture recognition system designed to enable intuitive interaction for individuals with challenges. Leveraging the power of OpenCV and MediaPipe, our system interprets hand gestures captured through a webcam, translating them into meaningful commands or actions

- Enhanced Communication
- Improved Engagement
- Inclusive Design

THE WOW IN YOUR SOLUTION

This hand gesture recognition system redefines interaction for individuals with cognitive disabilities, offering intuitive communication and control through simple gestures. With real-time understanding, customization options, and a focus on inclusivity, it empowers users to engage with technology effortlessly, promoting independence, social connection, and a higher quality of life.

MODELLING


Data Collection
Preprocessing
Feature Extraction
Model Selection
Training
Evaluation
Deployment

RESULTS

This is a real time output

GitHub link:https://github.com/dharshu2323/TNSDC-GenAI