

## 1. Multi-Modal Driver State Monitoring System (Advanced Version)

**Domains:** Computer Vision, LLM, Time-Series, Human Behavior Analysis

**Goal:** Build a system that takes **video**, **text commands**, and **sensor data** to assess **driver's attention, emotion, and intent**.

CV: Face, hand, gaze, and posture detection

LLM: Interpret spoken/text instructions (e.g., "take a break", "continue driving")

Optional: EEG/emotion sensors if available

## 2. AI Tutor: Image + Text + Audio Based Learning Assistant

**Domains:** LLMs, Vision, Speech, Education Tech

**Goal:** Build an AI tutor that can take **images of homework**, **text questions**, or **spoken doubts**, and explain answers in multiple modalities (text, voice, diagram).

OCR + Vision to understand textbook images

LLM to answer and explain with reasoning

Text-to-speech to narrate explanations