**Format for PPT for Zeroth Review**

**1. Title Slide**

* **Title**: Attentive AI: Real-Time Student Monitor
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**2. Agenda**

* *Presentation Agenda*
  + Introduction to AttentiveAI
  + Literature Survey
  + Motivation
  + Objective
  + Methodology
  + Models of the Domain
  + Expected Output
  + Ways to Use AttentiveAI

**3. Intro (Outline of the Concept)**

* *Introduction to AttentiveAI*
  + AttentiveAI is a real-time student monitor designed to enhance online learning experiences.
  + It utilizes artificial intelligence to track student attentiveness through facial expression and hand gesture recognition.
  + The goal is to provide educators and parents with insights into student engagement levels, helping to identify students who may need additional support.

**4. Literature Survey**

* *Literature Survey*
  + Numerous studies highlight the challenges of maintaining student engagement in online learning environments.
  + Existing research focuses on emotion detection and the role of AI in education.
  + Gaps identified include the lack of integrated systems that monitor both emotional states and physical engagement in real-time.
  + AttentiveAI addresses these gaps by combining facial recognition, emotion analysis, and gesture detection in one system.

**5. Motivation**

* *Motivation*
  + The shift to online education has led to concerns about student attentiveness and engagement.
  + Research shows that disengaged students are more likely to struggle academically.
  + AttentiveAI aims to provide a solution that enables teachers to monitor student engagement effectively and helps parents understand their children's learning behavior.

**6. Objective**

* *Objective*
  + The primary objective of AttentiveAI is to develop a comprehensive tool that utilizes computer vision and AI to assess and report student attentiveness during online classes.
  + By doing so, the system aims to enhance the overall learning experience for students and provide actionable insights for educators and parents.

**7. Methodology**

* *Methodology*
  + **Face Detection**: Utilizes OpenCV's cv2.CascadeClassifier to detect student faces in real-time video feeds.
  + **Emotion Analysis**: Employs the DeepFace library to analyze facial expressions and identify emotions such as happiness, sadness, or anger.
  + **Hand Gesture Recognition**: Implements Mediapipe to track hand movements and enable gesture-based interactions (e.g., volume control).
  + **Motion Detection**: Utilizes frame differencing to assess physical activity, allowing the system to determine whether a student is engaged or inactive.

**8. Models of the Domain**

* *Models and Tools Used*
  + **DeepFace**: For emotion recognition and analysis of student engagement.
  + **Mediapipe**: For hand gesture detection to facilitate interaction with the system.
  + **OpenCV**: For real-time video processing, face detection, and drawing bounding boxes around detected faces.
  + Integration of these technologies allows for a seamless user experience in monitoring student attentiveness.

**9. Expected Output**

* *Expected Output*
  + The system will provide real-time detection of emotions, displayed on the screen.
  + Hand gestures will control system functions, such as volume adjustment based on distance between thumb and forefinger.
  + Alerts will be generated for educators and parents when disengagement is detected, allowing for timely interventions.

**10. Ways to Use This**

* *Applications of AttentiveAI*
  + **For Teachers**: AttentiveAI can help educators tailor their teaching methods based on real-time engagement data.
  + **For Parents**: The system offers insights into their children's focus and engagement levels during online classes, enabling them to provide better support.
  + **For Schools**: By analyzing engagement data, schools can enhance their online learning tools and environments, ultimately improving student outcomes.