

TASK 4

Features of CNN useful for video proctoring

1. Convolutional layers: CNNs use convolutional layers to extract relevant features from the photo or video frame. These layers are designed to detect patterns by enabling the network to recognize certain objects, shapes or textures in video frames.
2. Spatial invariance: CNNs are spatially invariant, meaning they can recognize objects or features at different locations in an image or video. This tool is particularly useful in video proctoring, where the test taker's position or orientation may vary from frame to frame.
3. Transfer learning: CNNs can use pre-trained models and transfer their knowledge to new tasks. Large files, video proctoring systems can benefit from learning visual representations and use them to recognize various objects or functions in video proctoring.
4. Temporal Modeling: Video proctoring often requires examining a series of frames to detect inconsistencies or anomalies. CNN architectures such as 3D convolutional neural networks (3D CNNs) can capture complex patterns or movements over time.
5. Object detection and tracking: CNNs can be trained to perform object detection and tracking on images. This allows video proctoring systems to identify specific objects and monitor their movement or changes over multiple frames.
6. Real-time processing: CNN models can be optimized for real-time or near-real-time video analysis. This is crucial for the video proctoring process, which requires timely checking and responding to suspicious activity or inconsistencies during the exam.

Features of YOLO useful for video proctoring

1. Real-Time Object Detection: YOLO is designed for real-time object detection, making it well-suited for video proctoring systems that require immediate detection and response.
2. Simplicity and Speed: YOLO uses a single pass architecture; this means it processes all image or video frames in a single forward pass, eliminating the need for region proposal methods. This design makes YOLO faster compared to other object detection algorithms.
3. High Accuracy: YOLO achieves high accuracy in product detection by using the integration framework to directly predict containers and value classes for various products at once.
4. Diverse training and thinking: YOLO includes various training strategies that learn to recognize the properties of different solutions during training. This feature allows YOLO to handle changes in product size, which is important in video proctoring scenarios where objects may be at different angles to the camera.
5. Object Tracking: YOLO can be combined with tracking algorithms to track detected objects across multiple frames. This video is very useful in video proctoring, as it provides constant monitoring of objects or people.