Audio-visual steganography for military warfare

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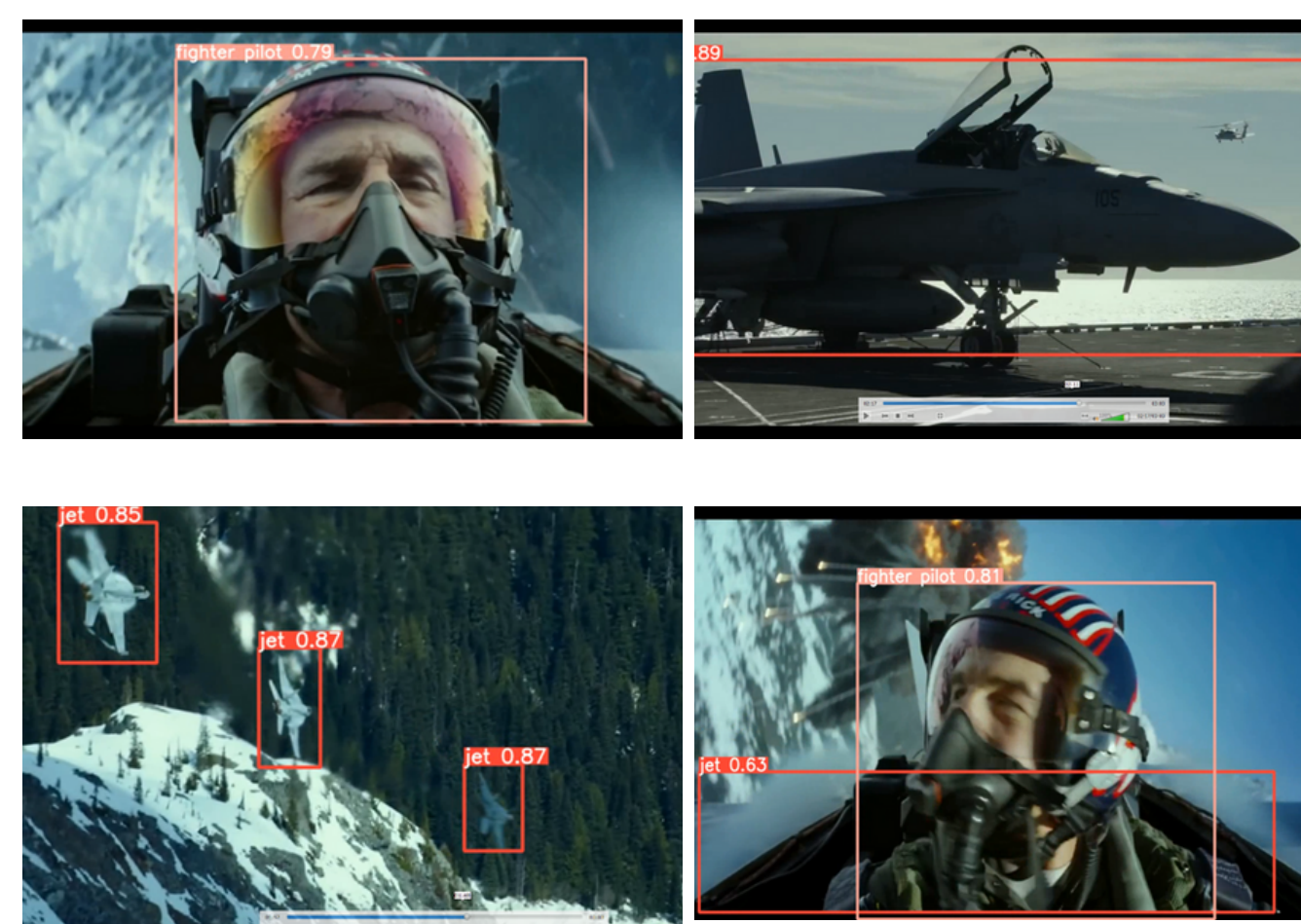
Project guide:- Shikha Tripathi

Abstract

To send top-secret military messages encoded in an audio-visual medium known only to the sender and receiver to decode without interference from enemies along with an added feature of object detection which is a viable tool that can be used for segmenting data and identifying possible enemy aircraft using accurately trained datasets and could be of significant assistance to the military.
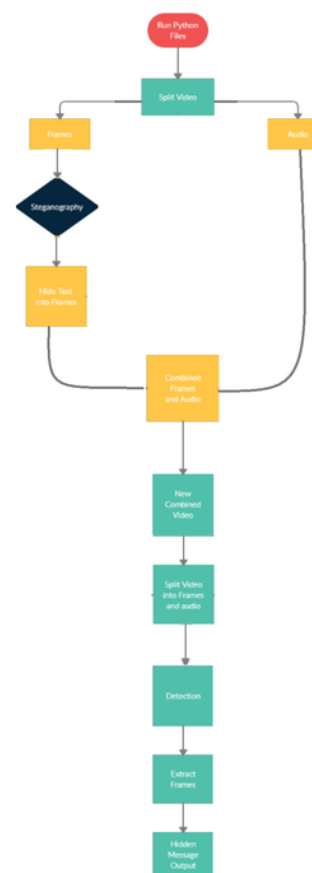
Methodology

YOLO is an unique convolutional neural network (CNN) that recognises objects in real-time with high accuracy. This method processes the entire image using a single neural network, then divides it into sections and predicts bounding boxes and probabilities for each component. These bounding boxes are weighted by the estimated probability. It then provides detected items after non-max suppression (which ensures that the object detection algorithm only identifies each object once).

The term "steganography" describes the process of hiding data or a file inside of a digital image, video, or audio file. A person will not be able to tell that there is any hidden information if they view the object that contains the information. As a result, the person won't attempt to decode the data. Text, image, and audio/video steganography are the three main categories of steganography. An extremely effective algorithm called LSB is employed to embed a text message in a cover file by making variations to the Least significant bit of certain pixels.

RESULTS

FLOWCHART

CONCLUSION

As we can observe this could be of great help to the military sector in detecting enemy missiles and decrypting secret enemy messages as well as warning fellow soldiers by sending secrets using steganography.

The frame range and other description specifications are transmitted using LSB-based steganography which is used to retrieve the message.

References

TopGun:Maverick(2022)
https://drive.google.com/file/d/1B-bj2lUv-QEKoArRre-sRILzFFyfxJeT/view?usp=sharing

BANDITS INBOUND

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