# Tiger Analytics helped a Fortune 100 sports broadcaster achieve 80% accuracy in overnight video processing with Computer Vision

Tiger Analytics built a Computer Vision solution that automatically identifies various elements from the broadcast videos. These included the sport being played, the athletes involved, and video segments (studio, commercial, interview segment, etc.) It involved processing about 600 hours of 2022 Winter Olympics broadcast videos to tag frames with accurate elements.
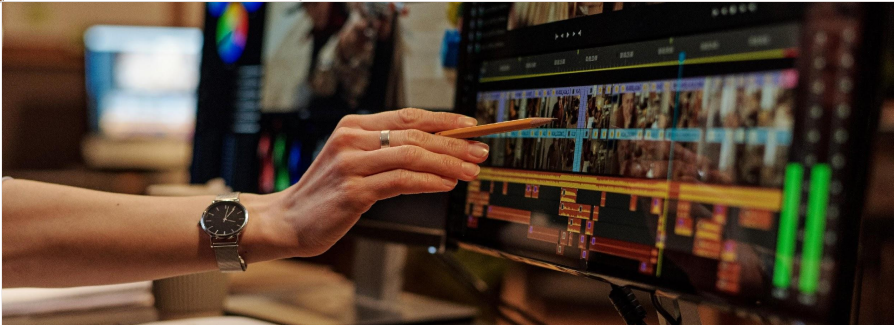
The Background

Our client is one of the largest Telecom conglomerates in the world, with several business units and broadcast channels. The client wanted to automate highlights generation from the 2022 Winter Olympic broadcast videos to ease the creation of athlete showcases, social media uploads, etc. The process involved human editors manually looking at the videos and identifying the sports being played, related athletes, ads displayed, etc. Hence, the client wanted to leverage a Computer Vision solution to enhance the process.
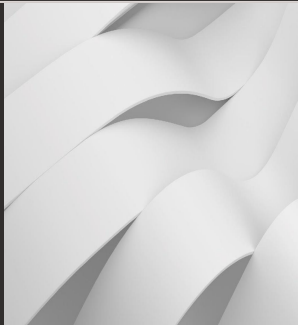
Key Challenges

Dataset discrepancies:
There were significant differences between training datasets and the actual Olympic broadcast videos.

Accuracy vs. speed:
The solution engine was expected to be highly accurate with a quick turnaround time, which seemed extremely challenging to achieve.

Frequent model retraining:
A large set of incremental data needed frequent retraining and refresh of models.

Our Solution

Tiger Analytics formulated a solution to address the challenges of video object recognition and frame classification.

The team began with **Data Preparation,** using 2018 Olympic broadcast video files (MP4) with text captions. They extracted a list of sports, countries, athletes, and more while verifying and manually correcting or augmenting existing annotations. Filtering techniques were then applied to transform and de-noise frames, making it easier to extract features and refine data quality.

The next step was the development of an **AI Engine.** The team constructed multiple detector models to recognize different frame elements and utilized publicly trained models like Tesseract and CNN. All object detection models ran on a frame, identifying segments using various models. The Random Forest model was also implemented to combine the outputs of these detectors into the right segment. The segment information was then enhanced with data from multiple detectors, such as sports names, athletes, and countries.

In the **Output** phase, the frames were classified into 20 different classes, such as studio/interview segment, sport, round, athletes, and more.

The end result was a JSON file, with each frame labeled with its respective identified classes.

Solution Architecture

Value Delivered

~600 hours of 2022 Winter Olympics broadcast videos were processed to automatically tag frames with accurate elements recognized.

It was easy to generate highlights/ reels to be uploaded to social media or TV broadcasts.

80% accuracy was achieved in processing the full broadcast videos overnight.

The solution could be implemented in future sporting events with minimal intervention.

About Us

Tiger Analytics is a global leader in AI and analytics, helping Fortune 1000 companies solve their toughest challenges. We offer full-stack AI and analytics services & solutions to help businesses achieve real outcomes and value at scale. We are on a mission to push the boundaries of what AI and analytics can do to help enterprises navigate uncertainty and move forward decisively. Our purpose is to *provide certainty to shape a better tomorrow.*

Being a recipient of multiple industry awards and recognitions, we have 4000+ technologists and consultants, working from multiple cities in 5 continents.

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