EdgeFleet.Ai AI/ML Assessmet

> Goal: Build a complete computer vision system to detect and track a cricket ball in videos recorded from a single, fixed camera.

Your System Should

- Detect the cricket ball centroid in each frame where it is visible.

- Output a per-frame annotation file (CSV or JSON) containing:
  `frame_index, x_centroid, y_centroid, visibility_flag`.

- Generate a processed video with the ball trajectory overlayed.

- Provide fully reproducible code and scripts for training, inference, and evaluation.

Input / Output Requirements

Input:

- Cricket videos from a single static camera.

Output:

- Processed video with the ball centroid and trajectory overlayed.

- Annotation file with per-frame detections.

Submission Instructions

Your public GitHub repository must include:

- All code for training, inference, tracking.

- A concise README with setup steps, dependencies, and instructions for running your pipeline.

- Annotated files and example annotated frames.

- Final processed videos (present in the below link) with trajectory overlay.

- Hyperparameter calibration results (if used).

- (Optional) A public WandB or TensorBoard link (if training a neural network).

- Model file required to replicate your results.

- A detailed report summarizing modelling decisions, fallback logic, assumptions made, and example outputs. Document how you fixed issues and improved model performance.

Repository Structure

```
code/                    # inference, model/training, tracking, utilities
annotations/             # CSV annotation files
results/                 # processed videos with overlays
README.md
requirements.txt or environment.yml
report.pdf
```

Example Output Formats

Annotation File (CSV):

```
frame,x,y,visible
0,512.3,298.1,1
1,518.7,305.4,1
2,-1,-1,0
```

Processed Output: MP4 video with centroid + trajectory overlay.

Dataset for Testing

Candidates should submit their outputs for the Videos Present in the drive.
Dataset link: https://drive.google.com/file/d/1hnaGuqGuMXaFKI5fhfy8gatzCH-6iMcJ/view?usp=sharing
The above dataset is purely for for testing the model output and must not be used in training the model.

Submission Deadline

18-2-2026, 10:00 P.M.