Senior Data Scientist

Brief

Welcome to your trial day task! In this exercise, you'll analyze video footage of individuals playing the classic game *Red Light, Green Light*. The goal is to build a lightweight solution that extracts insightful statistics about player movements within a resource-constrained environment.

Task Breakdown

In this task, you will analyze videos of players participating in a movement-based game, with the objective of developing insightful metrics related to player movements and progress. Below are some suggested metrics to consider, though you are encouraged to develop additional measures that may provide further insights.

Suggested metrics:

- Average Rate of Motion per player
- Average Rate of Motion per movement
- (Relative) Distance Progressed: The cumulative distance each player manages to advance per movement cycle.
- Consistency in Motion Patterns: Identify any patterns in players' motions, such as variations in motion rate or distance covered per attempt.

Feel free to propose or calculate any additional metrics that you think would be valuable for evaluating player performance, such as reaction times, rate of deceleration upon stopping, or patterns in speed. You are welcome to innovate on any aspect that could add depth to the analysis.

Constraints:

To simulate real-world limitations, please adhere to the following constraints:

- **Low-Compute Environment**: Design a solution that can run efficiently on a limited computational setup.
- **Model Usage**:
    - Avoid pre-trained object detection models and transformer models.

Supplied Materials

- Video dataset
- Presentation template

FAQ & Guidelines

Q: Can I use pre trained object detection models?

A: It depends. While object detection models are generally restricted, you may be allowed to use simplified or custom versions if they meet the parameter constraints (under 3 million parameters) and avoid complex architectures.

Q: Can I use a transformer model?

A: No, transformer models aren't allowed.

Getting Help

If you find yourself needing help throughout the day, or have any questions, please feel free to contact anyone from the following key contact list.

Buddhi: +94 77 363 0611

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Good luck!