

Semester Project

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# Physics Sensible Tracker (Update)

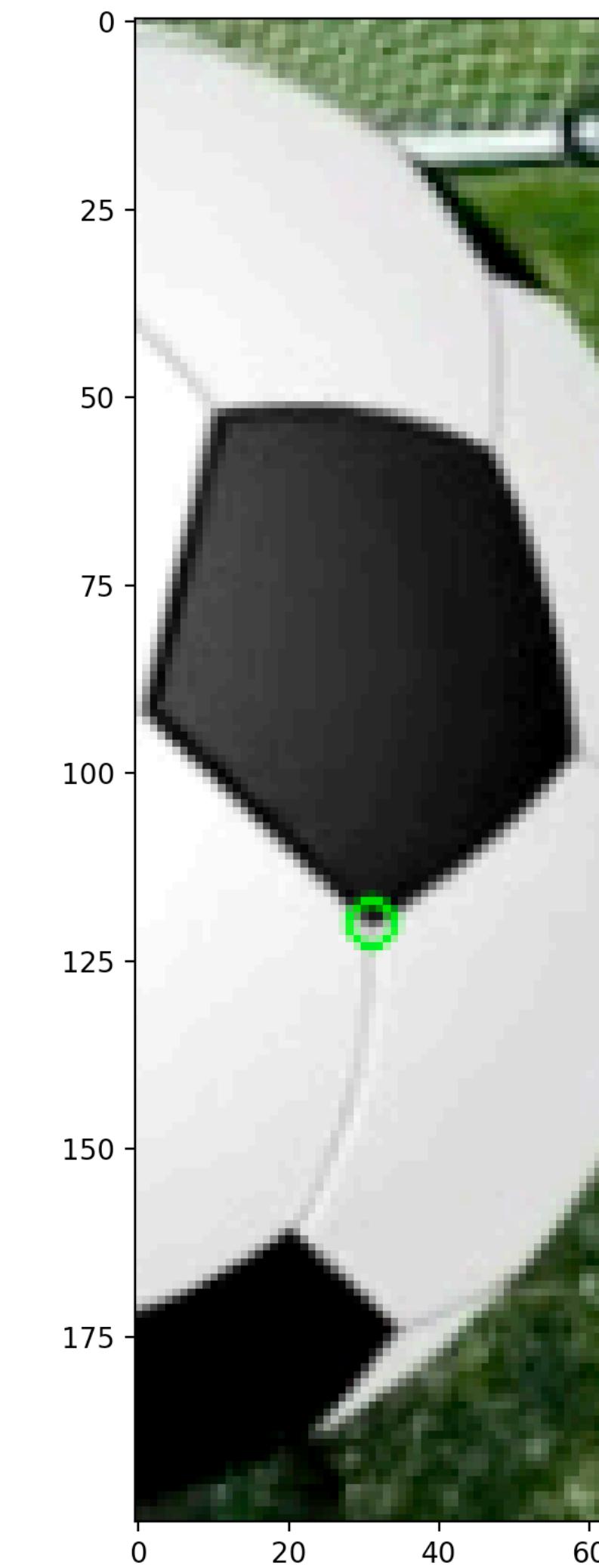
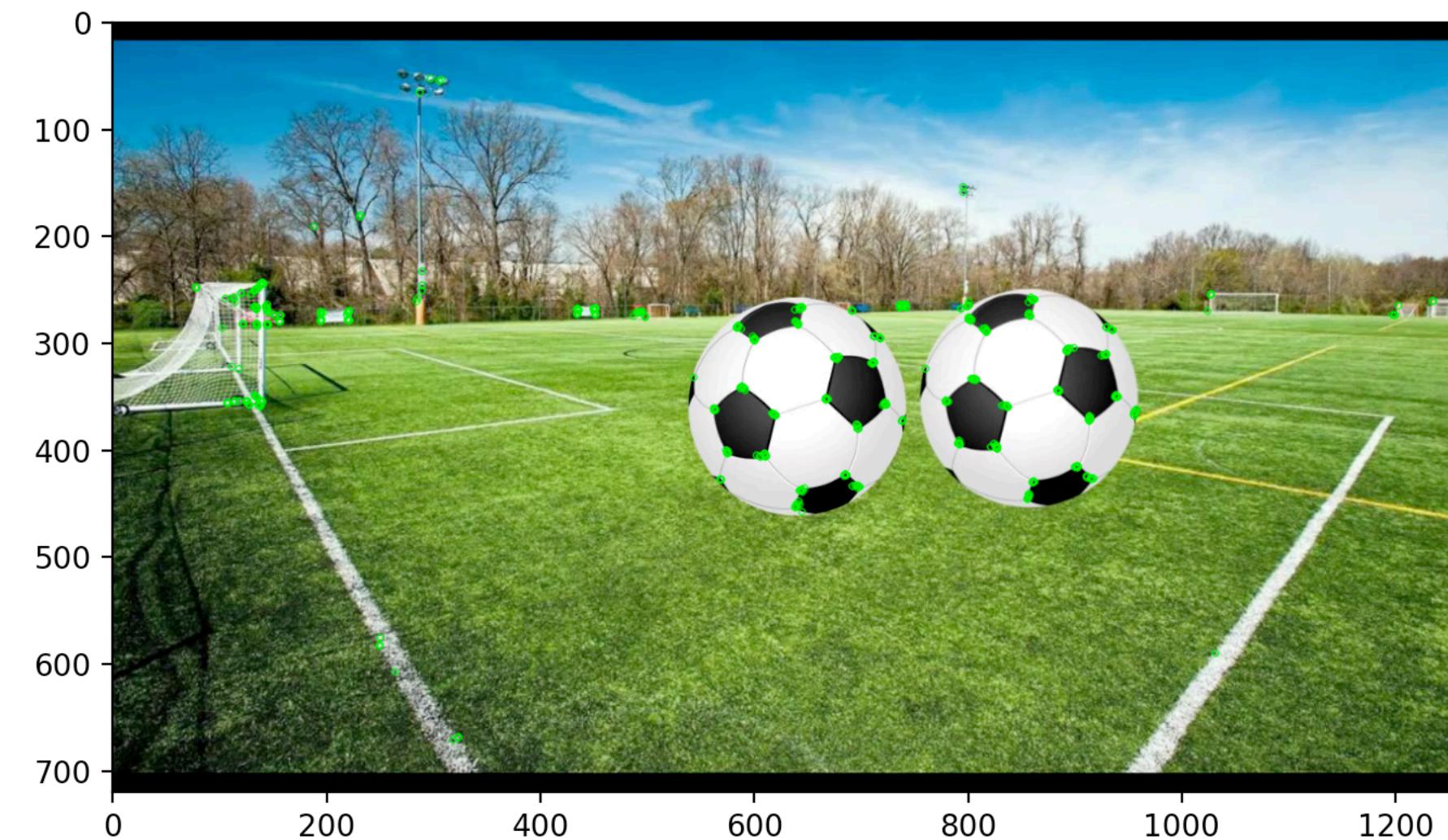
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BY RICARDO ALVAREZ AND OSCAR GALINDO

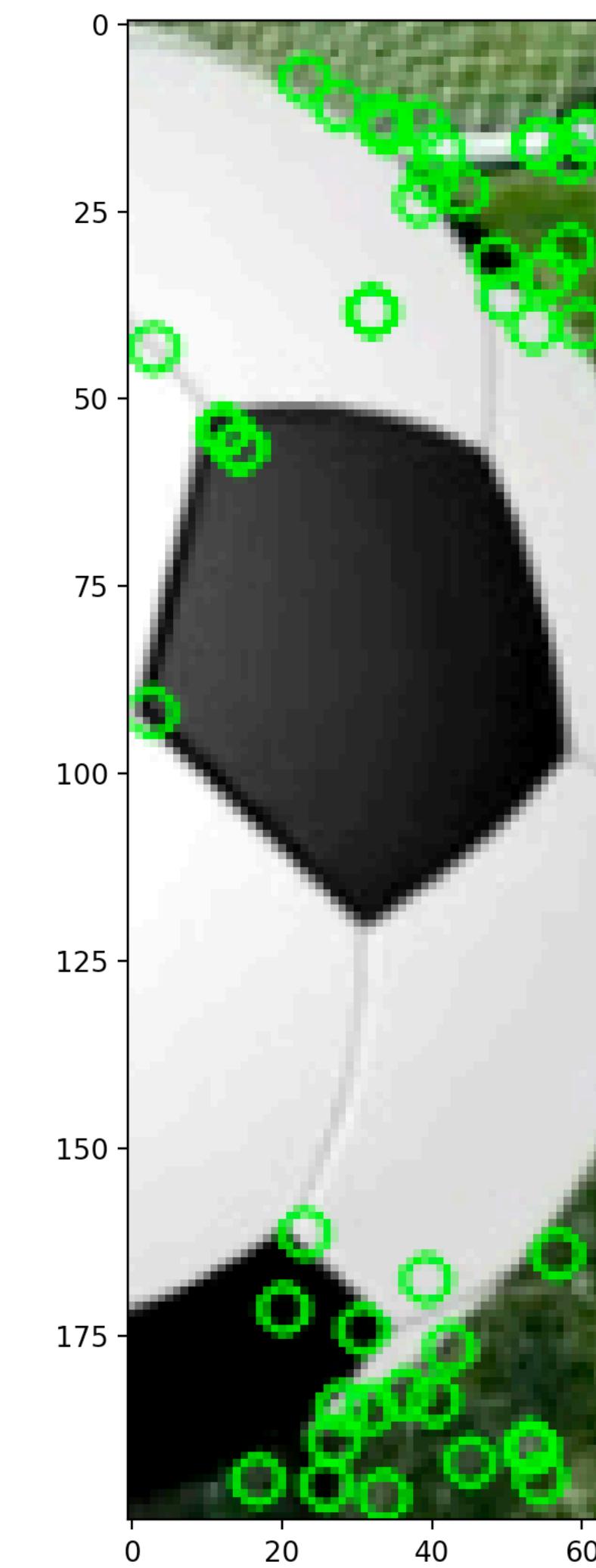
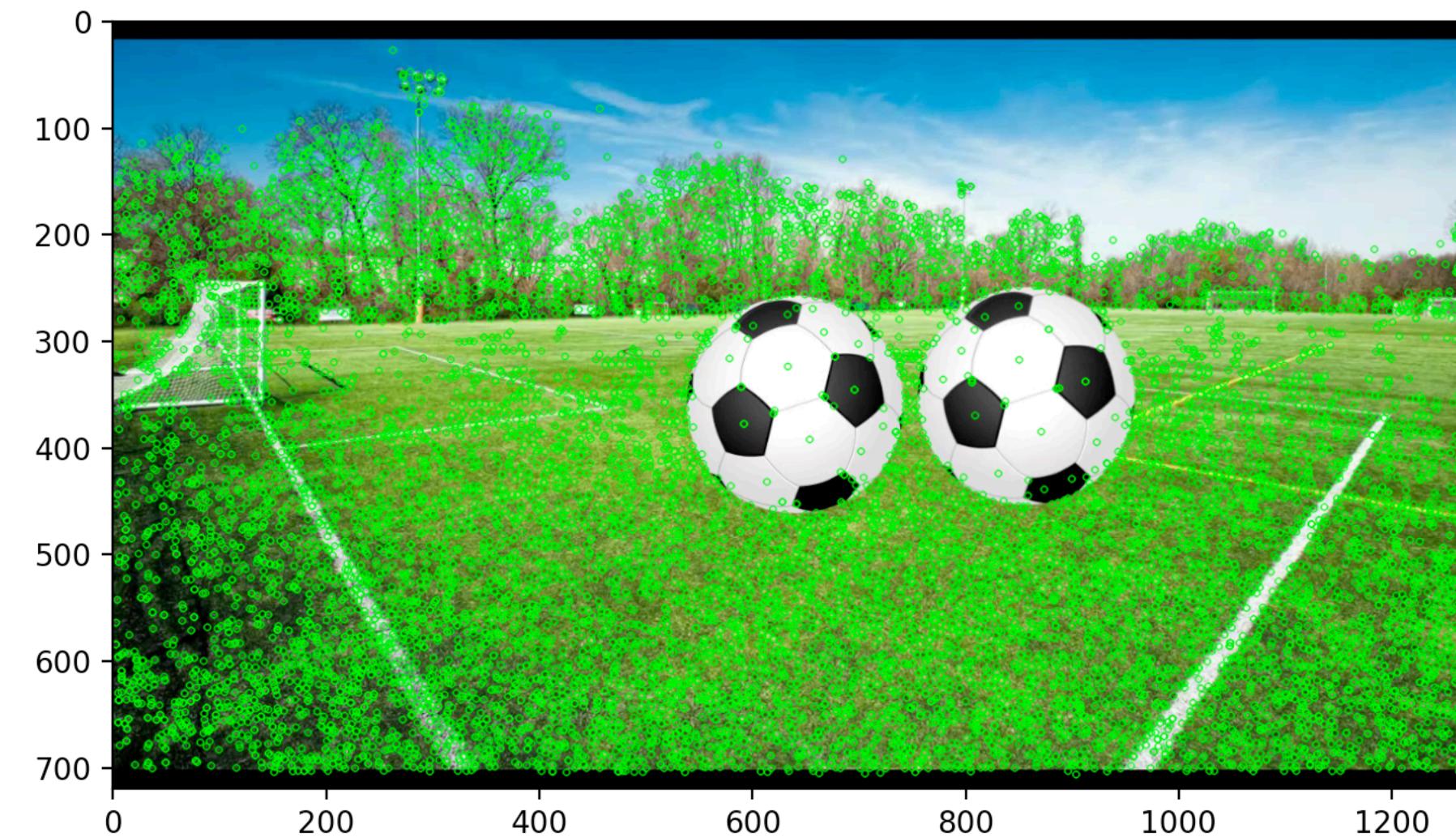
# Updates

- We have around 40% of the work we expect to do for this project.
- We have already included a basic motion model based on a simple trajectory using two points that are selected by the user.
- We have worked with the identification of features
  - Tried ORB but ORB failed to detect enough key points on the area selected by the user at the start of the execution
  - Hence, we decided to move forward and try to perform object detection using SIFT (also implemented in the OpenCV library).
- We are on our way to develop a new method to “resist” the incorrect prediction of movement of the object through the detection of key points and features throughout the frames.
  - We will like to use the key points found by SIFT in the area where our tracked object is found so that the points found can be matched to the salient points found in any frame of the video
  - Then, we will like to provide some distribution of probabilities around each of the “matched” points and linearly combine such probabilities with the probabilities that the motion model provides.

# ORB



# SIFT



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# Work to Do

- Implement our idea of using matched points to provide “areas” of probabilities.
- Find a linear combination of probabilities different than multiplication
- Also work on creating a scheme by which we update the motion model and the appearance model
  - Specifically, we mean to modify the target object or area tracked of the object every “X” frames.

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# Q&A?

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# Thank You

-Oscar and Ricardo

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