DSC 210: Numerical Linear Algebra (FA'24)

In this homework, we ask you to rehearse your final presentation with another group (we call it the Partner group in this doc) and have the opportunity to improve your presentation skills based on the feedback from your fellow students.

Please submit the feedback form following the timeline table in the Course project doc (**due Dec 10, 2024 Tuesday 1:00 PM**)

Instructions

- Below are some evaluation criteria on the presentation:
    a. Slides presentation
        - Does it contain all the important slides, if not, what is missing?
          Yes, it seems like they covered all the point, though they deviate from the template slides. Regardless, the slides are clean and look professional.

        - Clarity of the presentation
          Very clear presentation, I had an easy time understanding the concepts laid out in their presentation. They did a good job balancing both high-level descriptions and low-level mathematic formulation.
    b. Contents
        - Does it cover the important information, if not, what is missing?
          Yes, from the presentation I was able to understand the basics of Kalman filtering. The team did a great job at explaining the pros and cons. The state-of-the-art deepsort algorithm was also very well composed and covered the algo overview of object detection. They also laid out there key equations in good way, it was easy to understand and clean.

        - Does it summarize the key ideas and results clearly?
          Yes, they did a good job in both Kalman and DeepSort to describe their experiment and results of both the Kalman linear algebra solution and the SOTA DeepSort solution. They were able to demonstrate the differences in several graphs.

        - Does it compare the methods properly?
          Yes, they compare the methods side by side in their results describing the differences in an easy to understand way.

        - Does it point out the limitations and challenges of the methods?
          Yes, they have a detailed slide in Kalman describing the cons and they frame up the path towards DeepSort

        - Is it clear and coherent?
          Yes, very clear and easy to understand through the presentation.

c. Time control
    - Is it on-time (~10 min)
      They ended at about 15 minutes so they could shave some time off.

- Please summarize the partner group's presentation in a short paragraph, and list what are the good things and what are the things that can be improved.
    a. Please follow the above (a)-(c) evaluation criteria and answer the questions
    b. Besides evaluation (a)-(c), please summarize your comments and give at least 3 good things and 3 to-be-improved things for the presentation

Overall the group did a great job at describing their linear algebra approach of implementing Kalman filtering and the state-of-the-art approach of leveraging DeepSpeed for object detection. Their formulation was clear, and they laid out the equations that they implemented clearly in a single slide. They describe how object detection is improved upon by using DeepSort and a convolution neural network to increase accuracy of object detection. They demonstrated their experiment setup and results cleanly and provided interpretable graphs for visualizing the test outputs. They were clear and precise in their explanations and provided a thoughtful presentation on their topic. The only point of criticism I have is that they are over time by about 5 minutes and could shave down a little bit in order to get closer to the 10-minute target.