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Period 3
4/21/20

Journal 27

Throughout this past week, I added functionality to the four sliding scales in my GUI: “Depth Differential”, “Distance Differential”, “Frame Rate”, and “Look Ahead”. In essence, the user can now choose one of three videos from the dropdown menu in the top left corner. After doing so, the user can then choose various values for the four sliding scale parameters. To explain these parameters briefly:

1. Depth Differential: How close (depth-wise) two vehicles need to be considered “crashing”.
2. Distance Differential: How close (in 2-d) two vehicles need to be considered “crashing”.
3. Frame Rate: The frame rate at which the output video will playback.
4. Look Ahead: How many frames ahead should the algorithm check when attempting to predict a vehicle crash.

Thereafter, the user can now click the “Run User-Parameter Crash Prediction” button and get the output crash prediction video generated by my algorithm on the selected video with the selected four parameters. Figure 1 shows the updated “Linear Approximation Approach” section of the GUI with the new sliding scale (“Look Ahead”) and button (“Run User-Parameter Crash Prediction”).

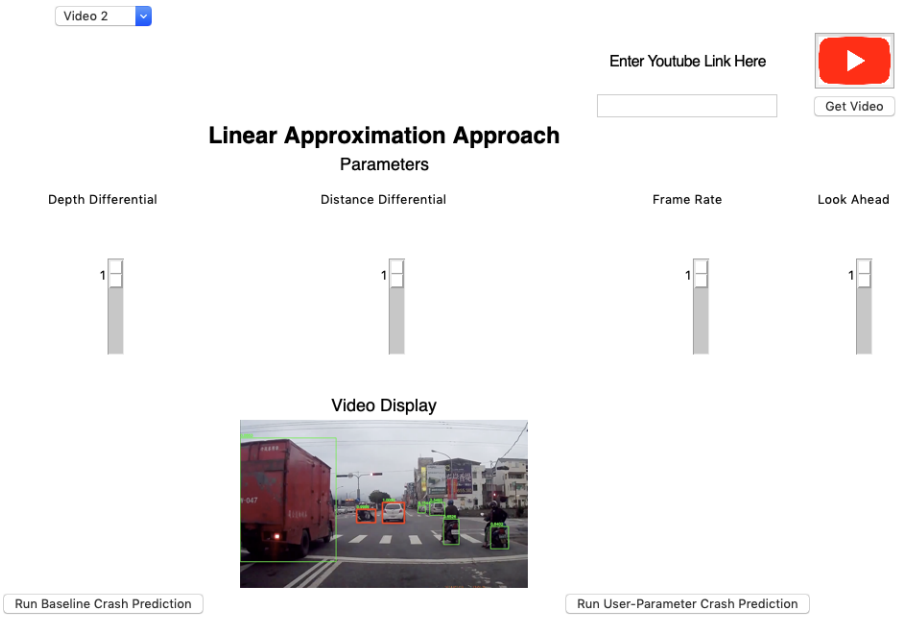

Figure 1

Figure 2 shows the output video for “Video 2” and the following parameter configurations: Depth Differential = 100, Distance Differential = 100, Frame Rate = 30, Look Ahead = 10. Because both Depth Differential and Distance Differential are very high, the algorithm isn’t as strict at labeling predicted crashes which is why there are so many red boxes in the output video. This shows how my algorithm adapts to the user’s selections. I’ve run into a small bug which is preventing the output video from playing back automatically. I’ll work to fix this issue as soon as possible. My next goal is to update the ML model so the user can enjoy predictions that are backed by more data.

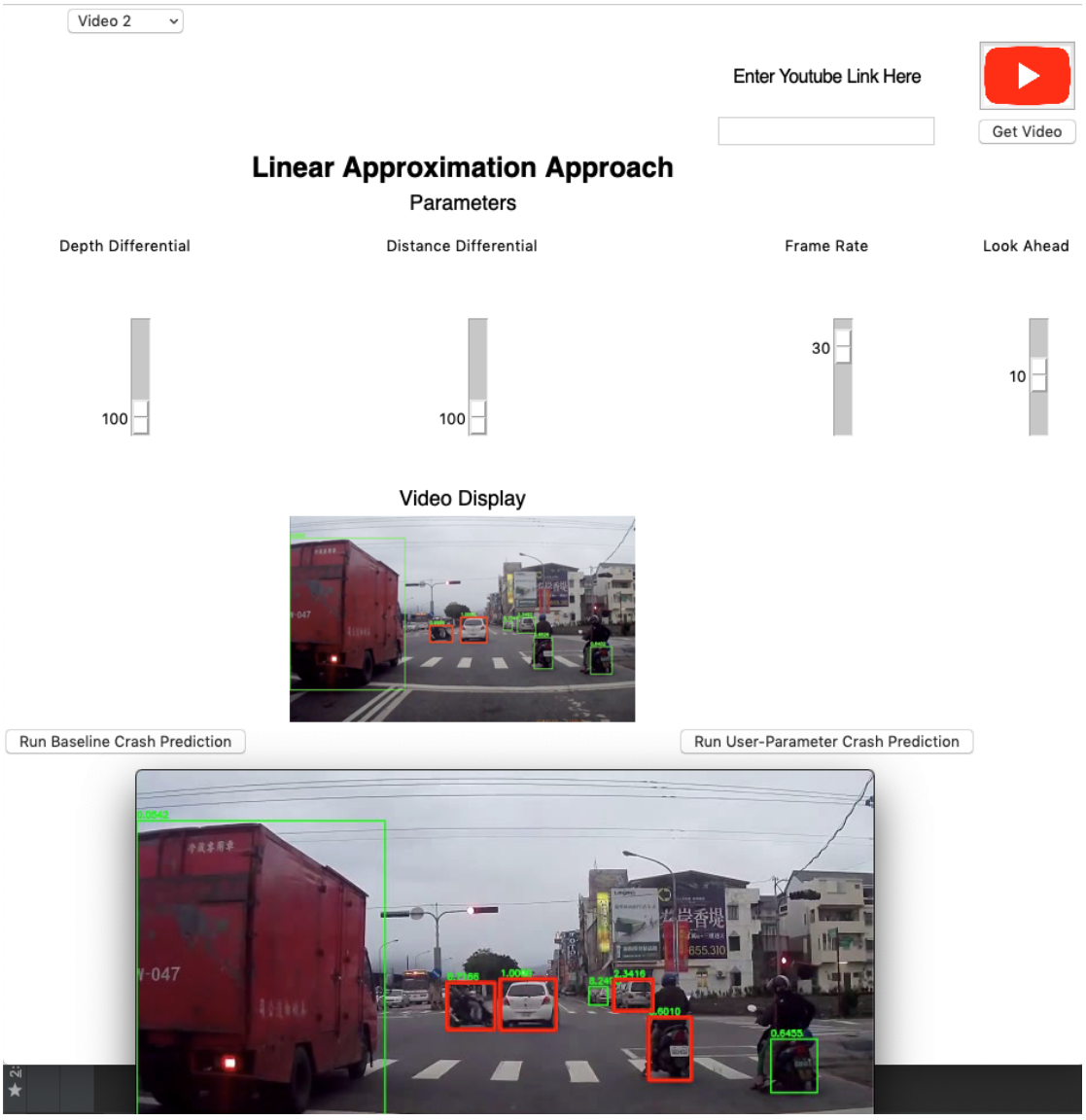

Figure 2