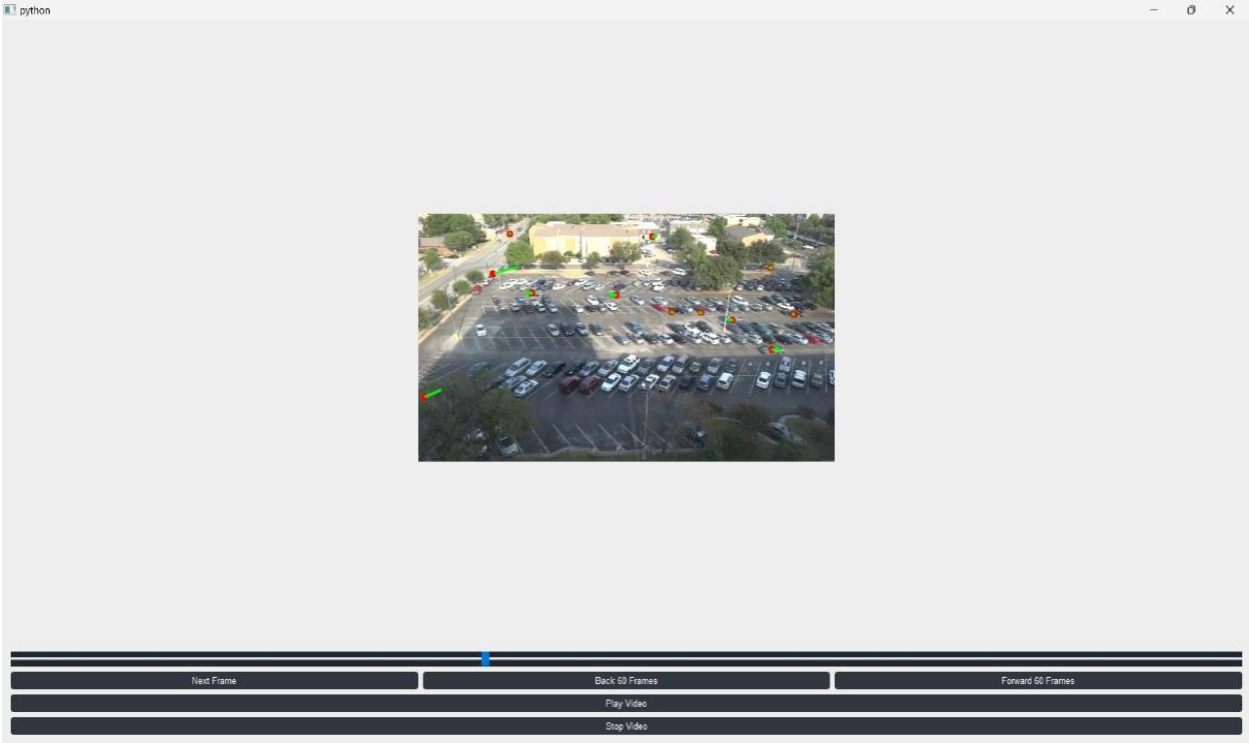
Assignment - 3

Detecting Motion:



Description of Assignment:

A command-line tool that provides a GUI for accessing a given video. After then, the software will use motion detection techniques to track objects in the video. Next, an implementation of a basic Kalman filter will be used to track the item.

Project Requirements:

Python – version 3.10 to 3.11
Numpy – newer then 1.26.4
Scikit-video – newer then 1.1.11
Pyside2 – newer then 5.15.2.1
Scikit-image – newer then 0.22.0
opencv-python – newer then 4.9.0.80

Installation / Running project:

There is a folder named dist in the project's root folder. Two distribution files are located therein and can be installed with pip. Whichever one you want to utilize is up to you. The dependencies will be installed as well. You can use the following command to install it:

Using the Provided Distribution Files:

- pip install <path-to-directory>/dist/detecting_motion-1.0.0-py3-none-any.whl

Project Usage:

Upon program launch, a slider and a number of buttons will be visible. Either select Next Frame or Skip Forward 60 Frames to start the tracking.

You can play the movie and watch the objects being tracked after the first frames are initialized. Additionally, you can adjust the slider to a certain frame while the video is paused. Playing the video and letting it play is the best way to see the things being monitored.

To run the program, you can use the following command:

- motion_tracker <path-to-video>