Vehicle Detection from Color Images

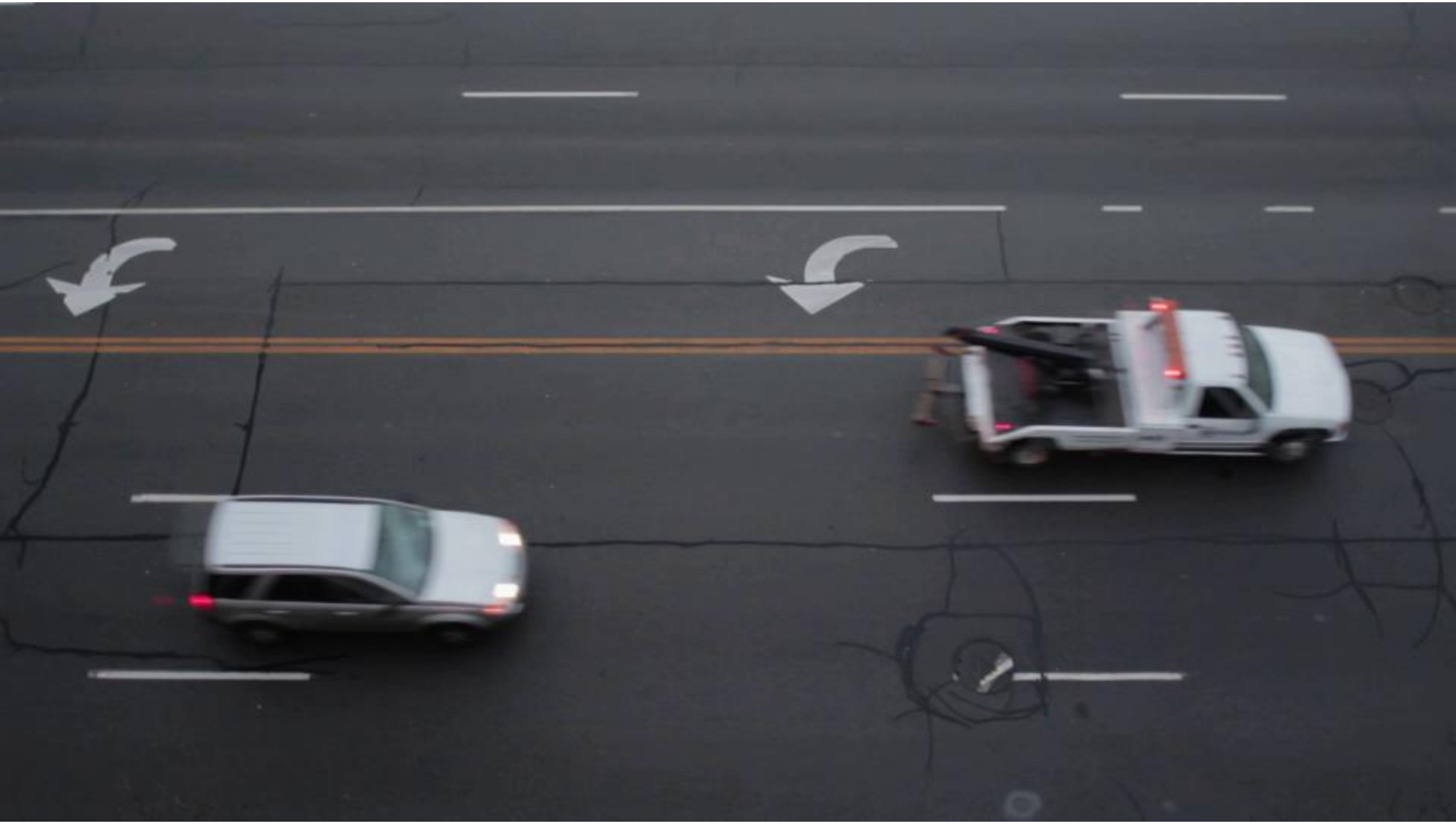
Militaru Cristian

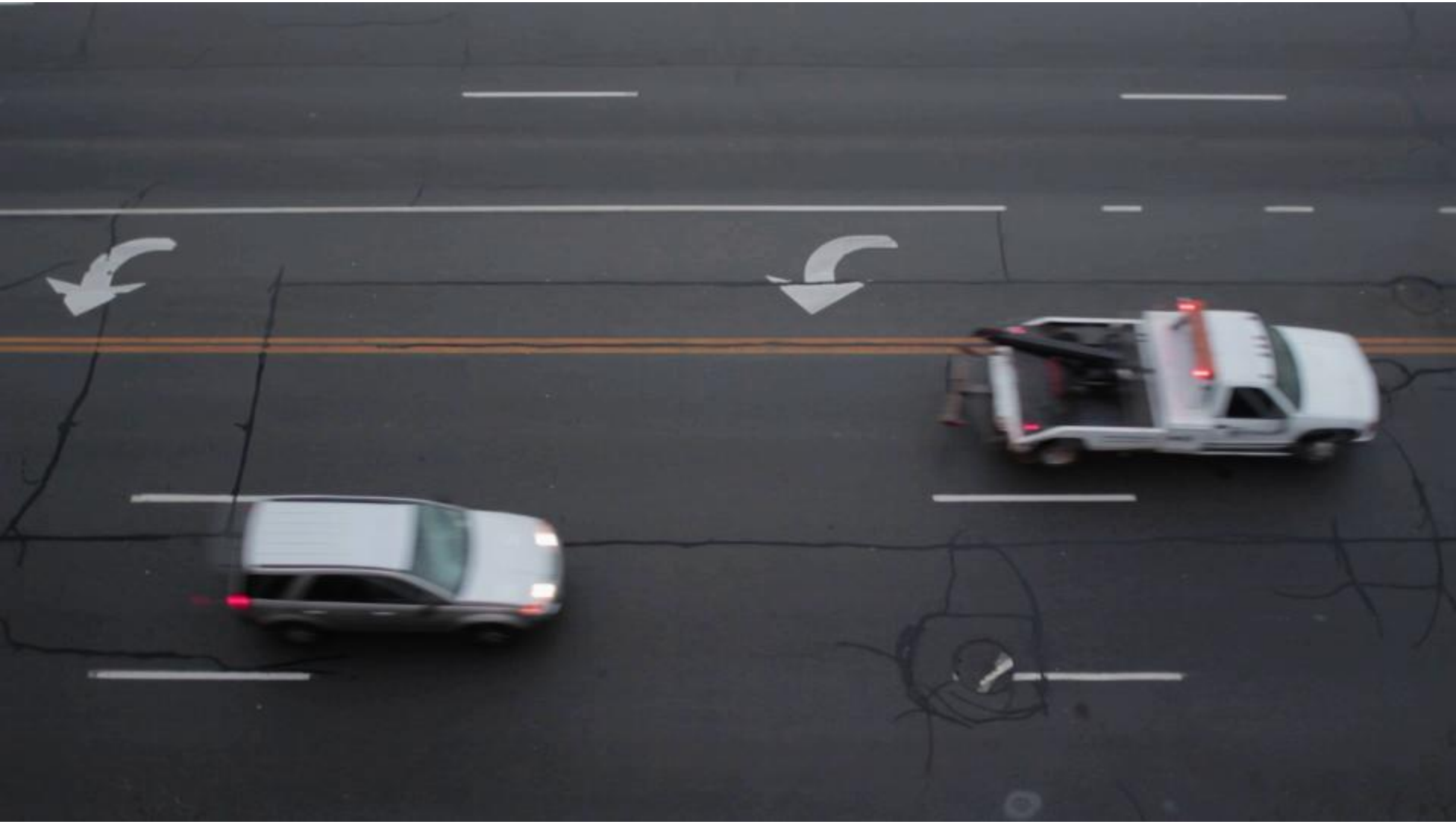
Gr. 30431

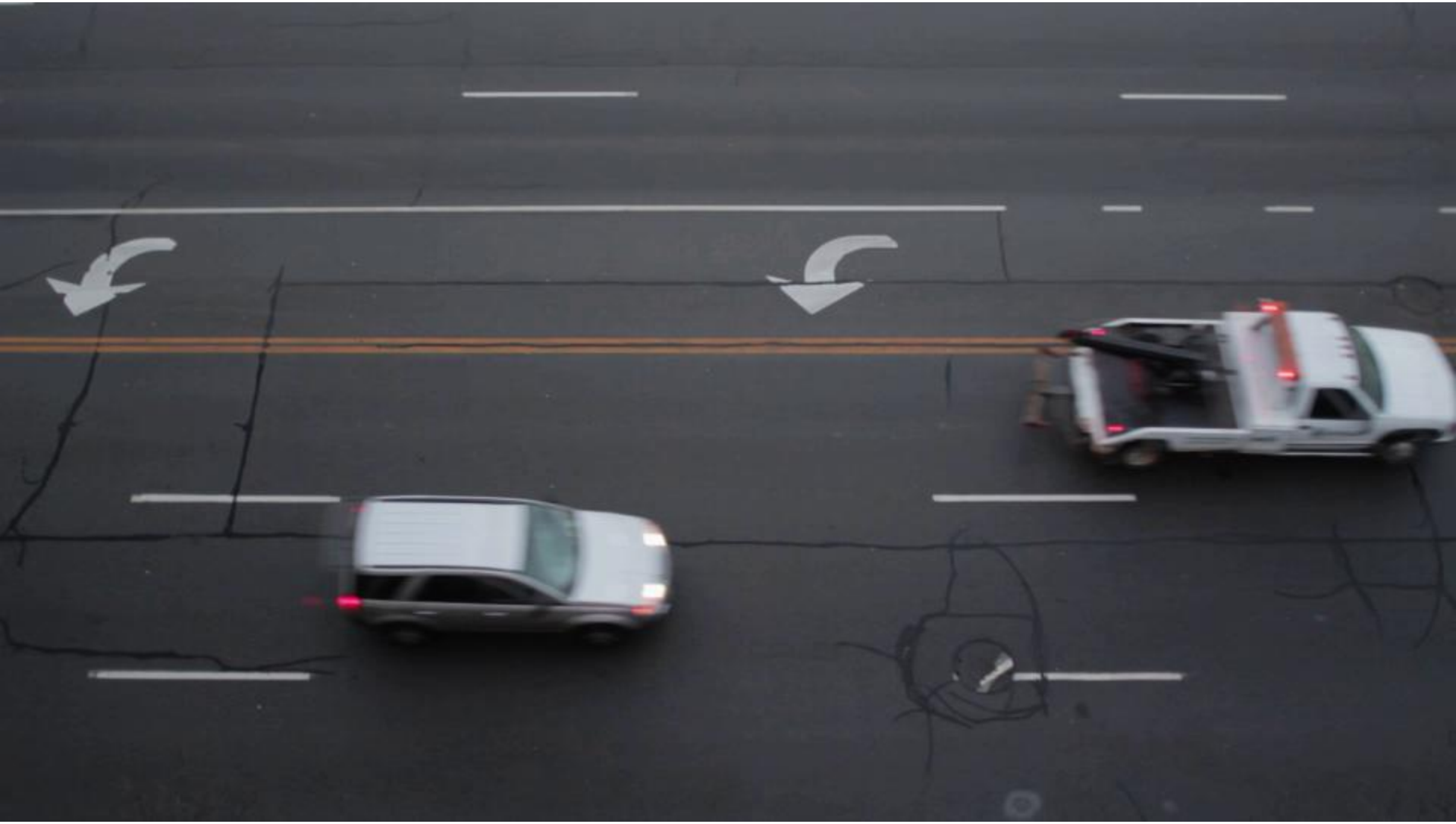
Problem statement

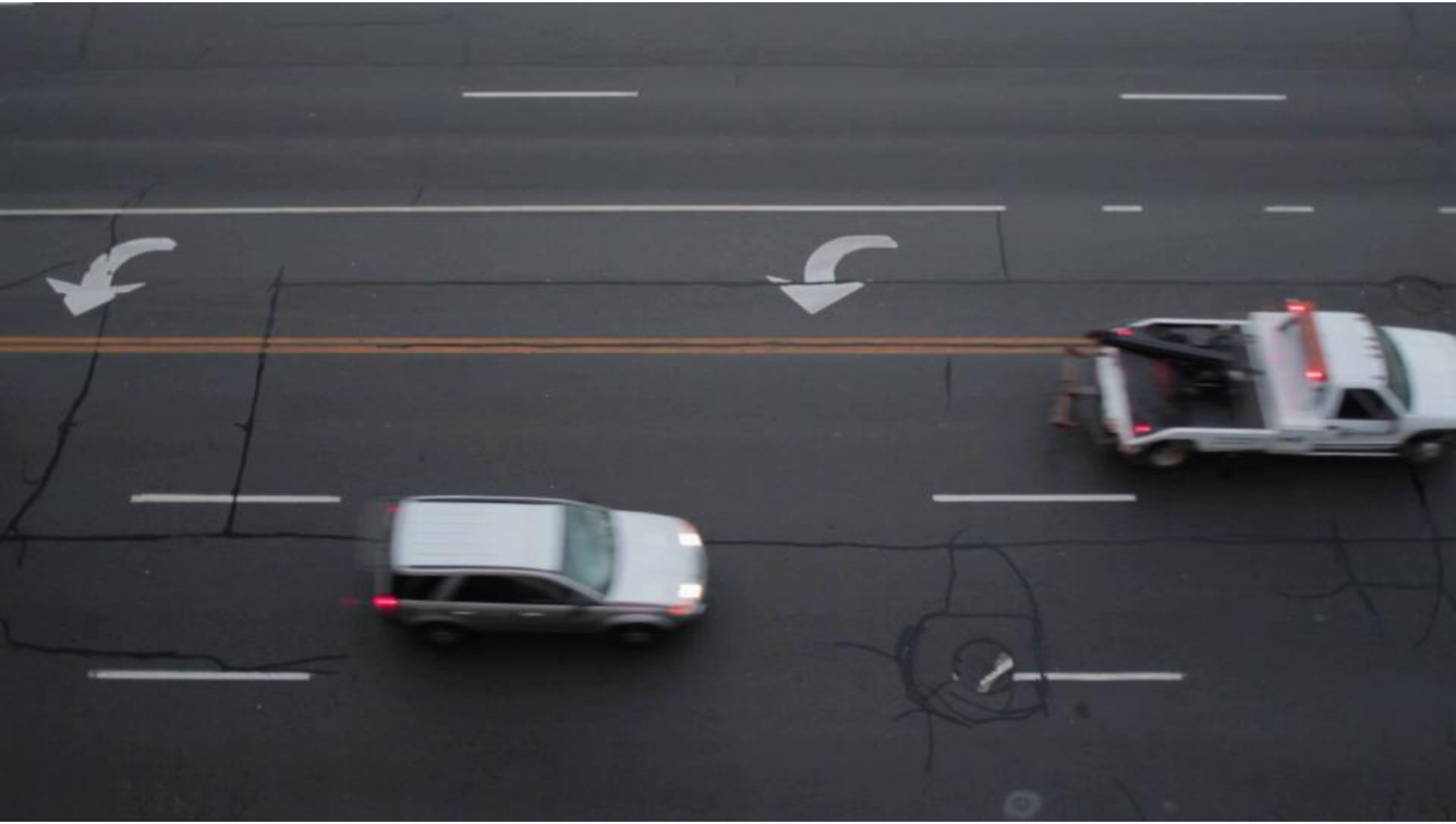
- Given:
  - A color video (sequence of images)
- Find:
  - The vehicles in each moment

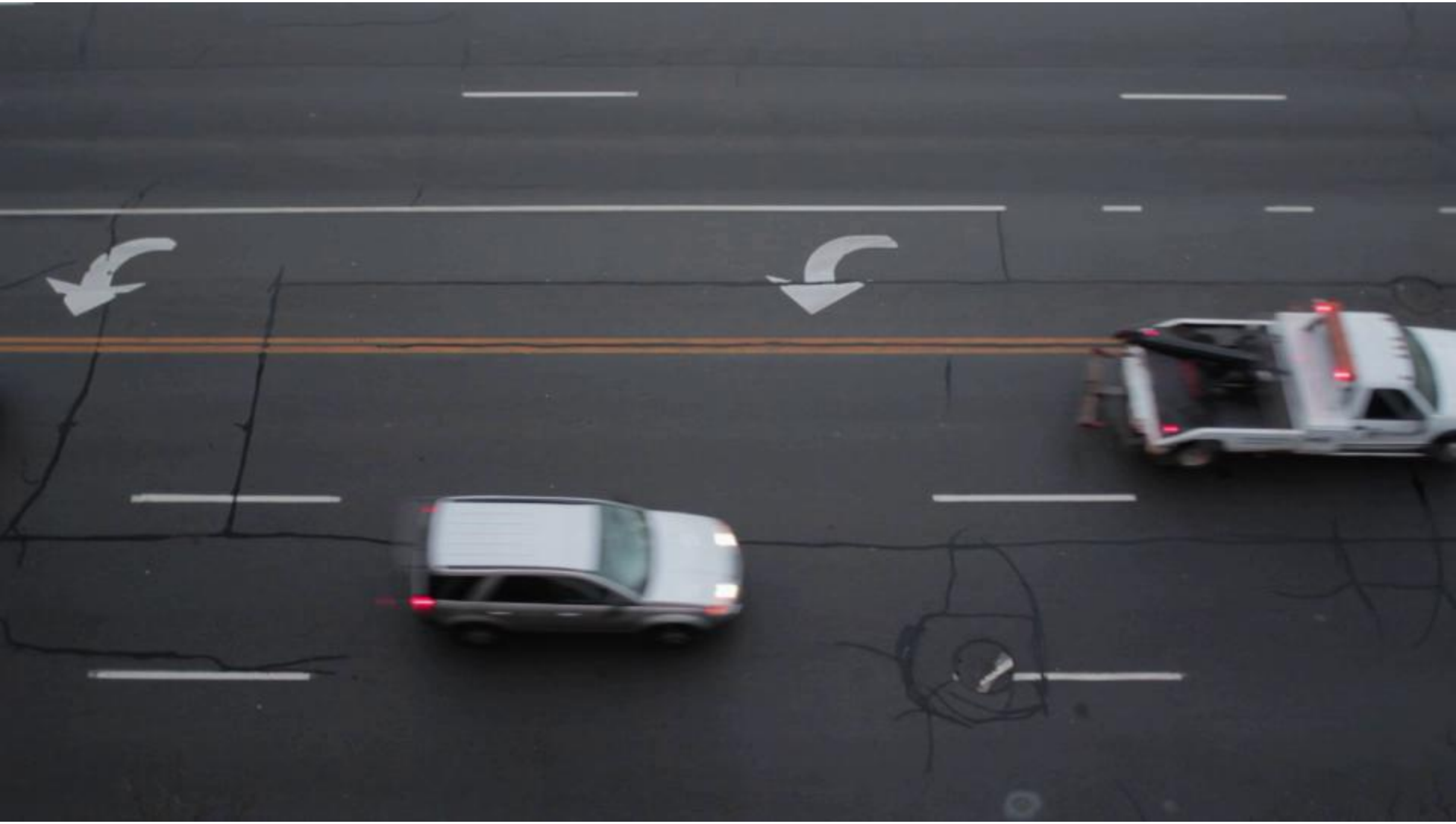
Input

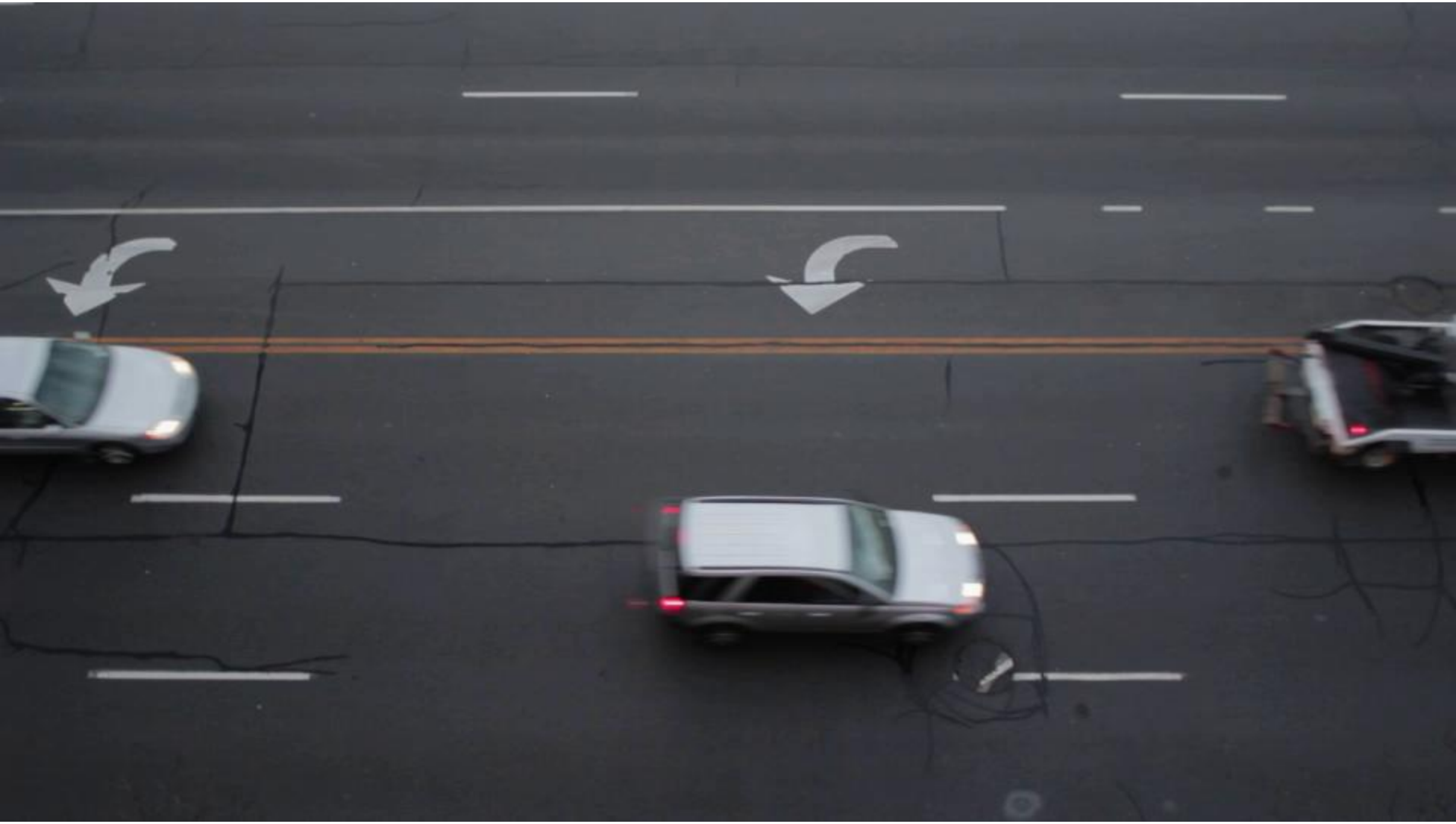




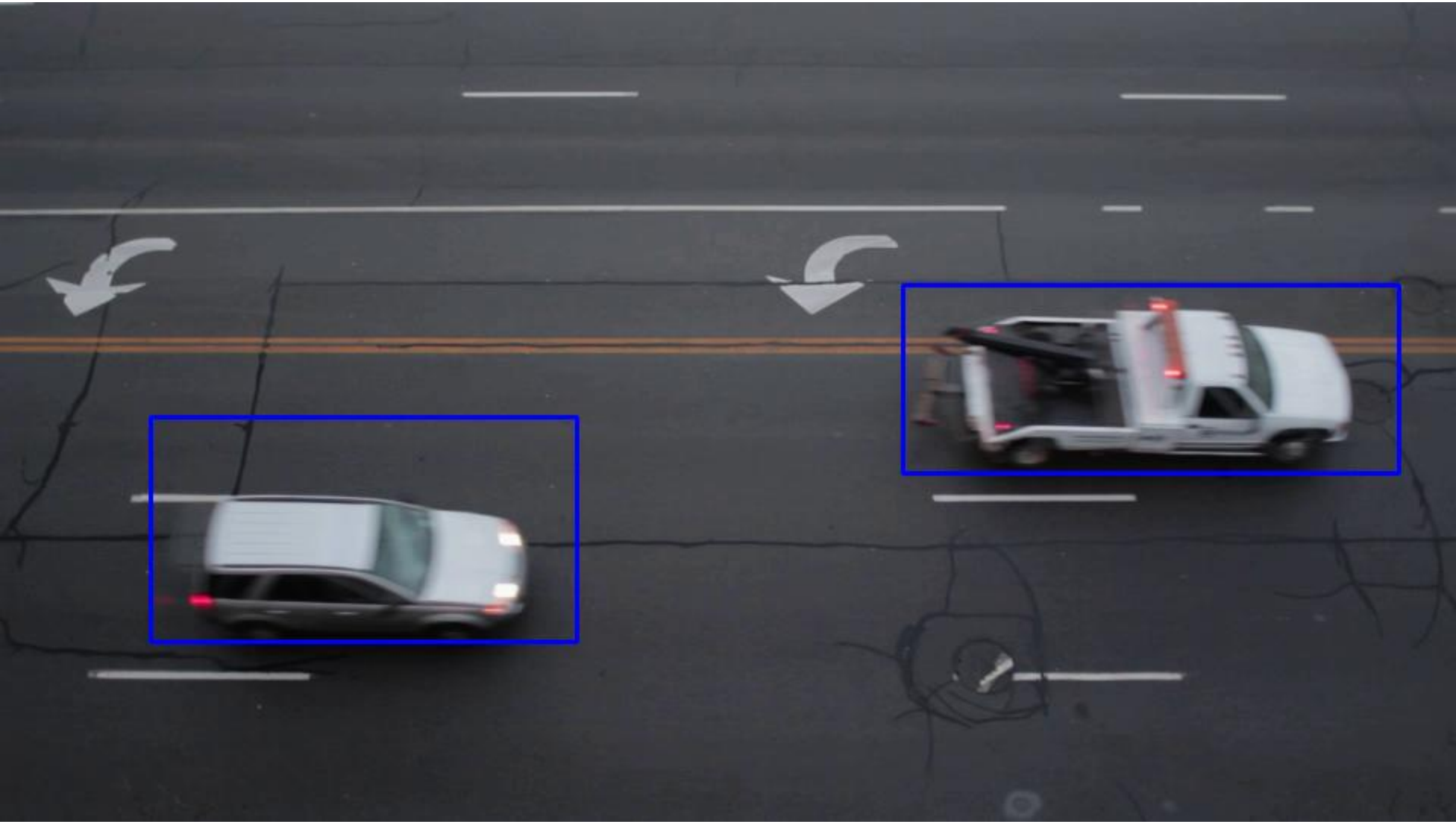


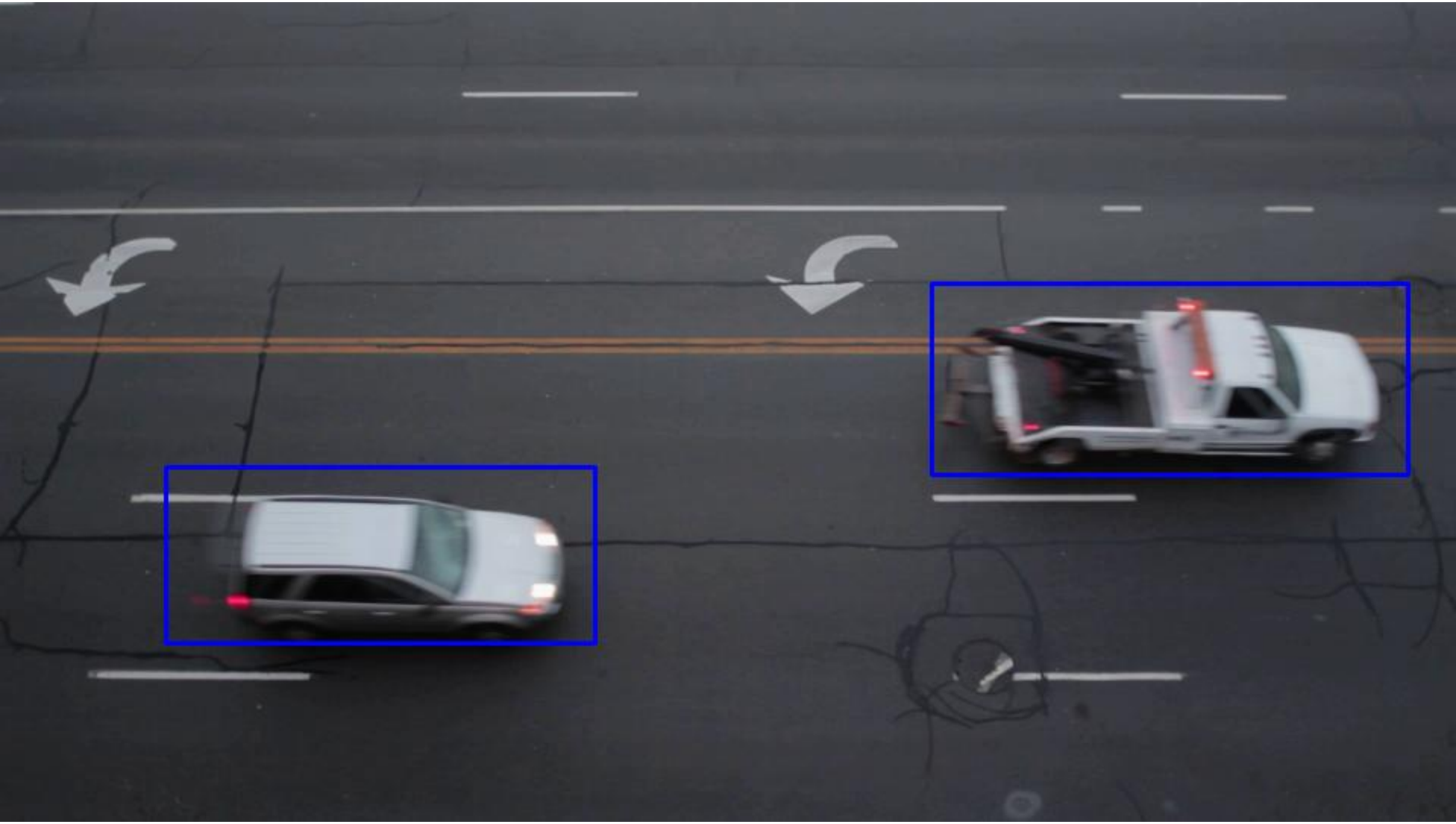


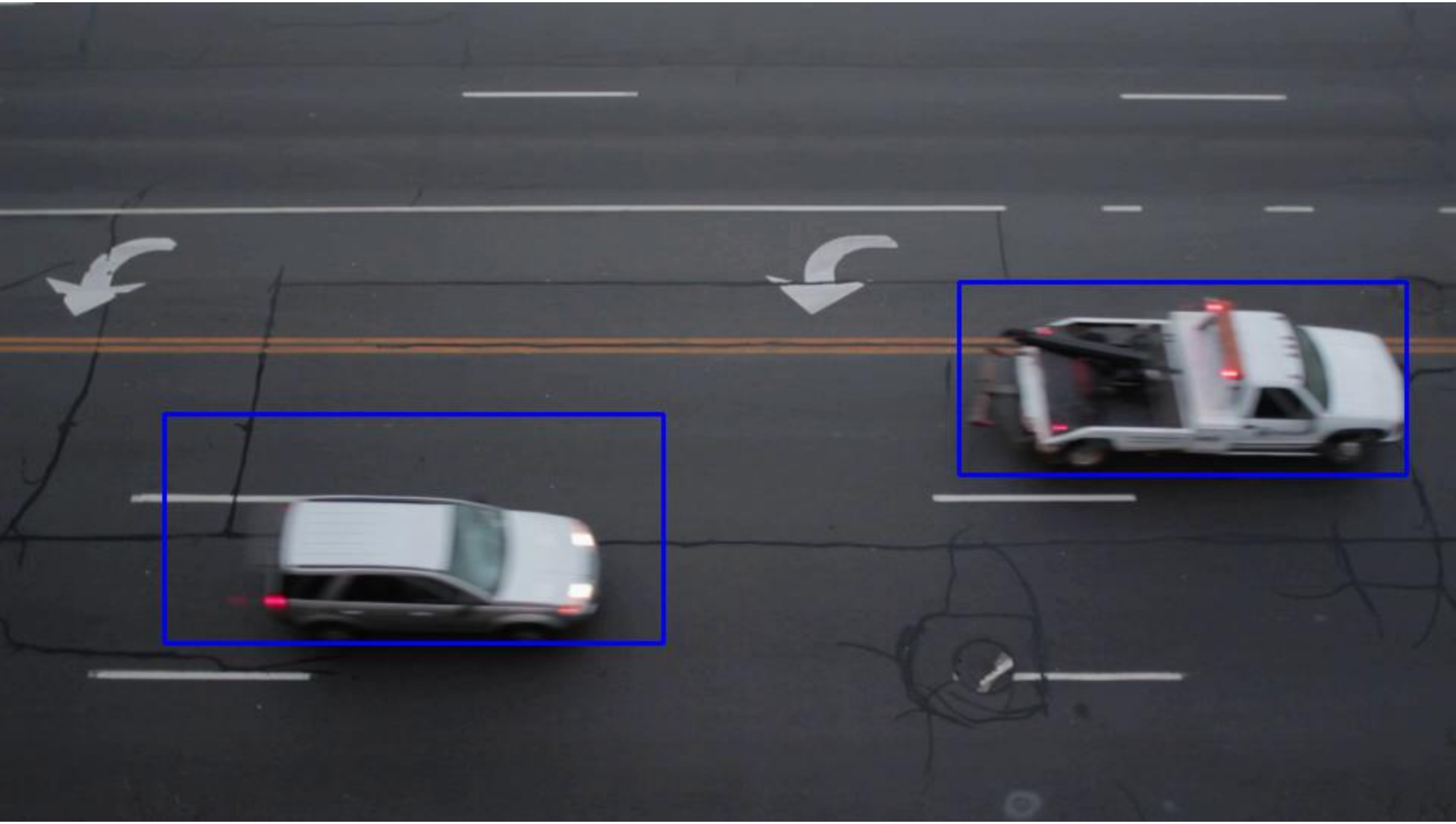


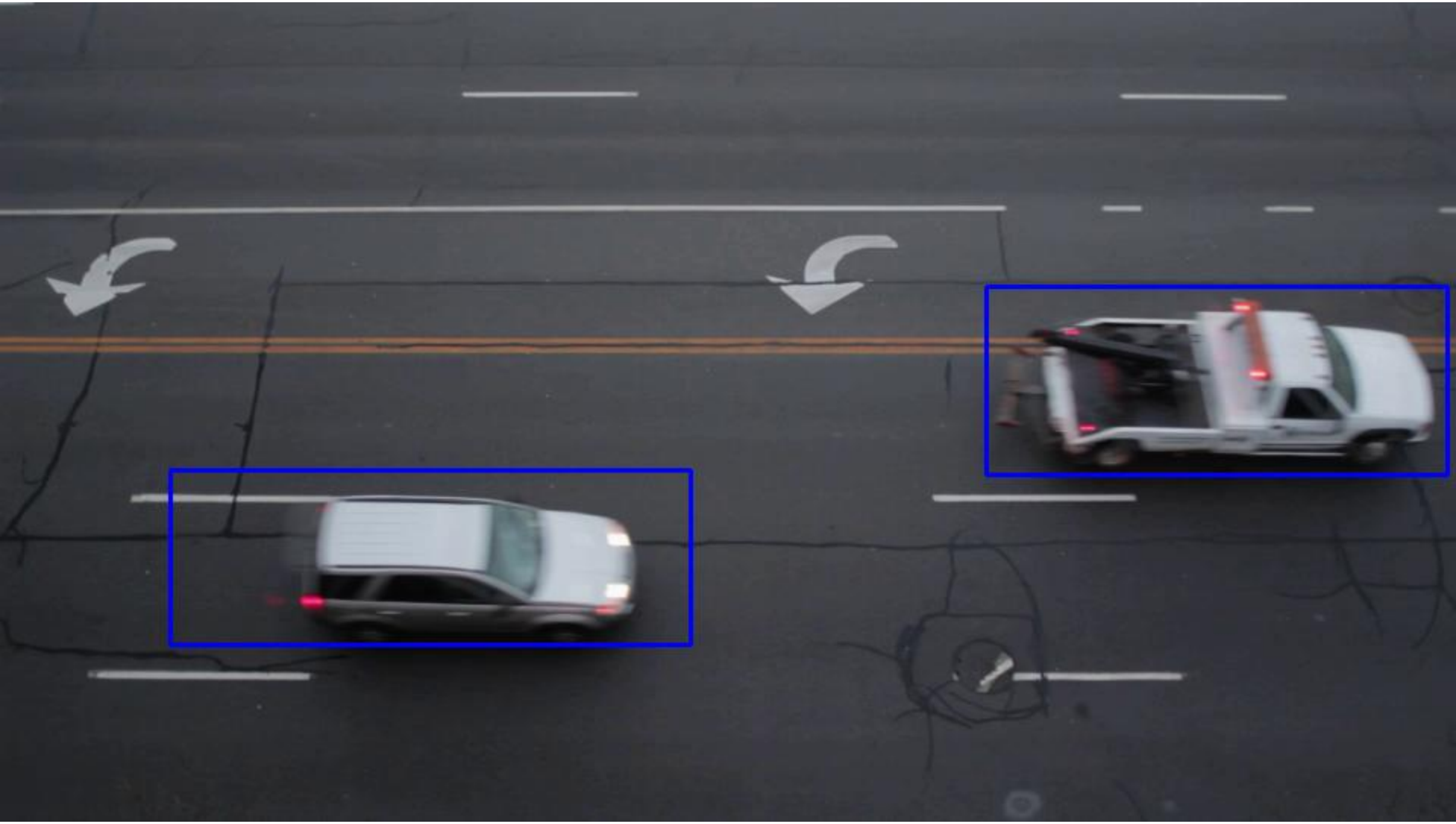


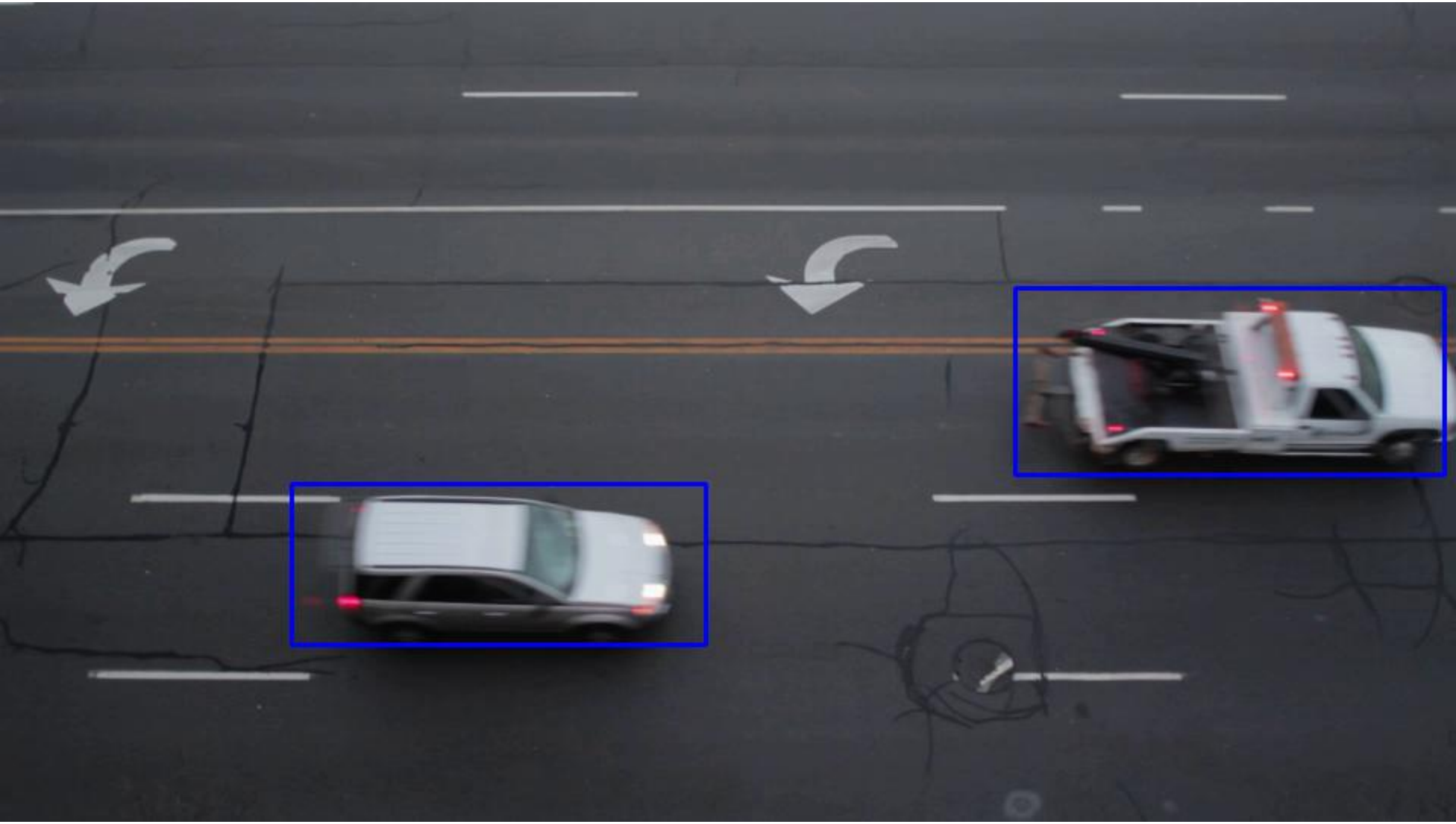
Output

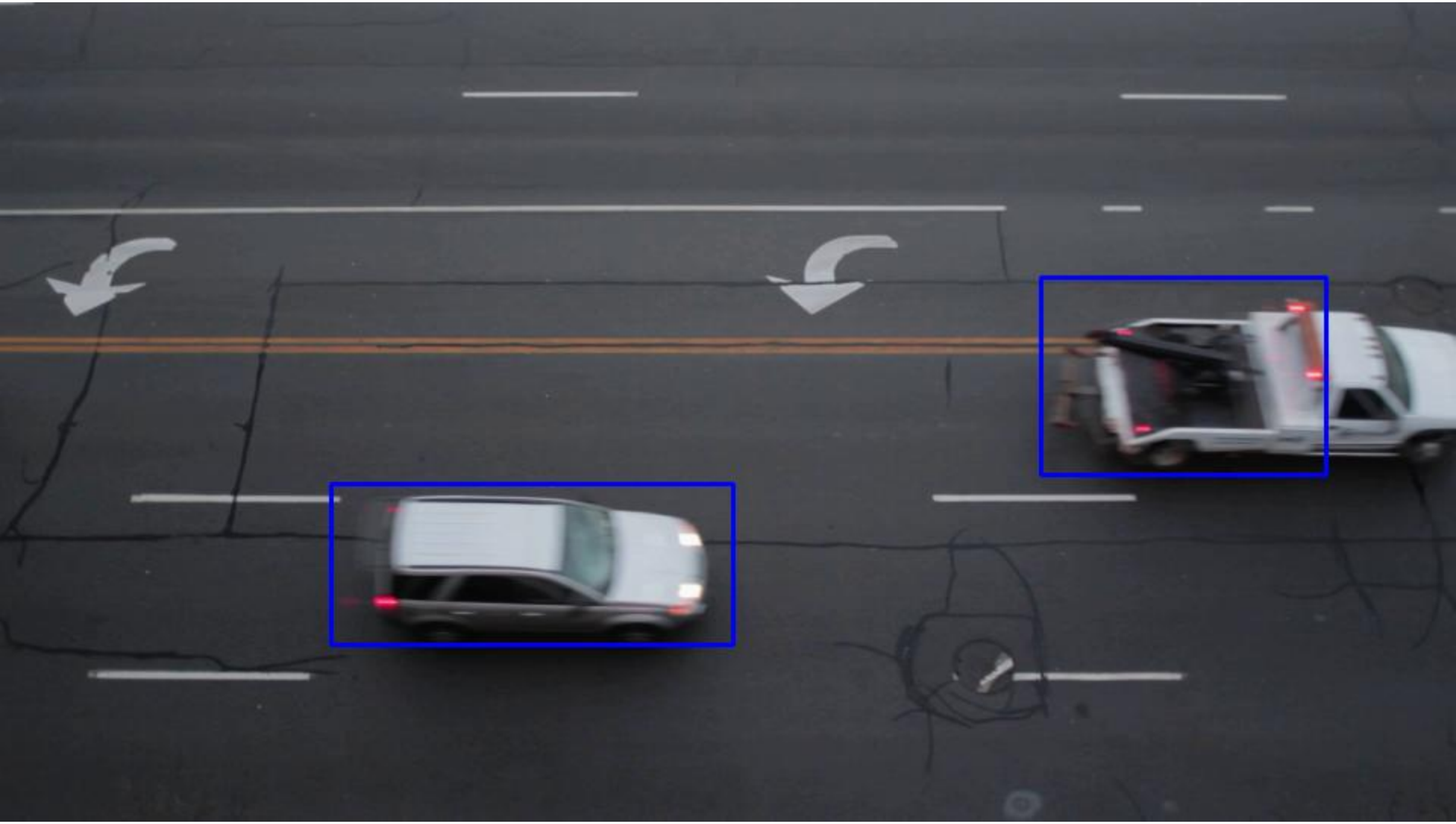


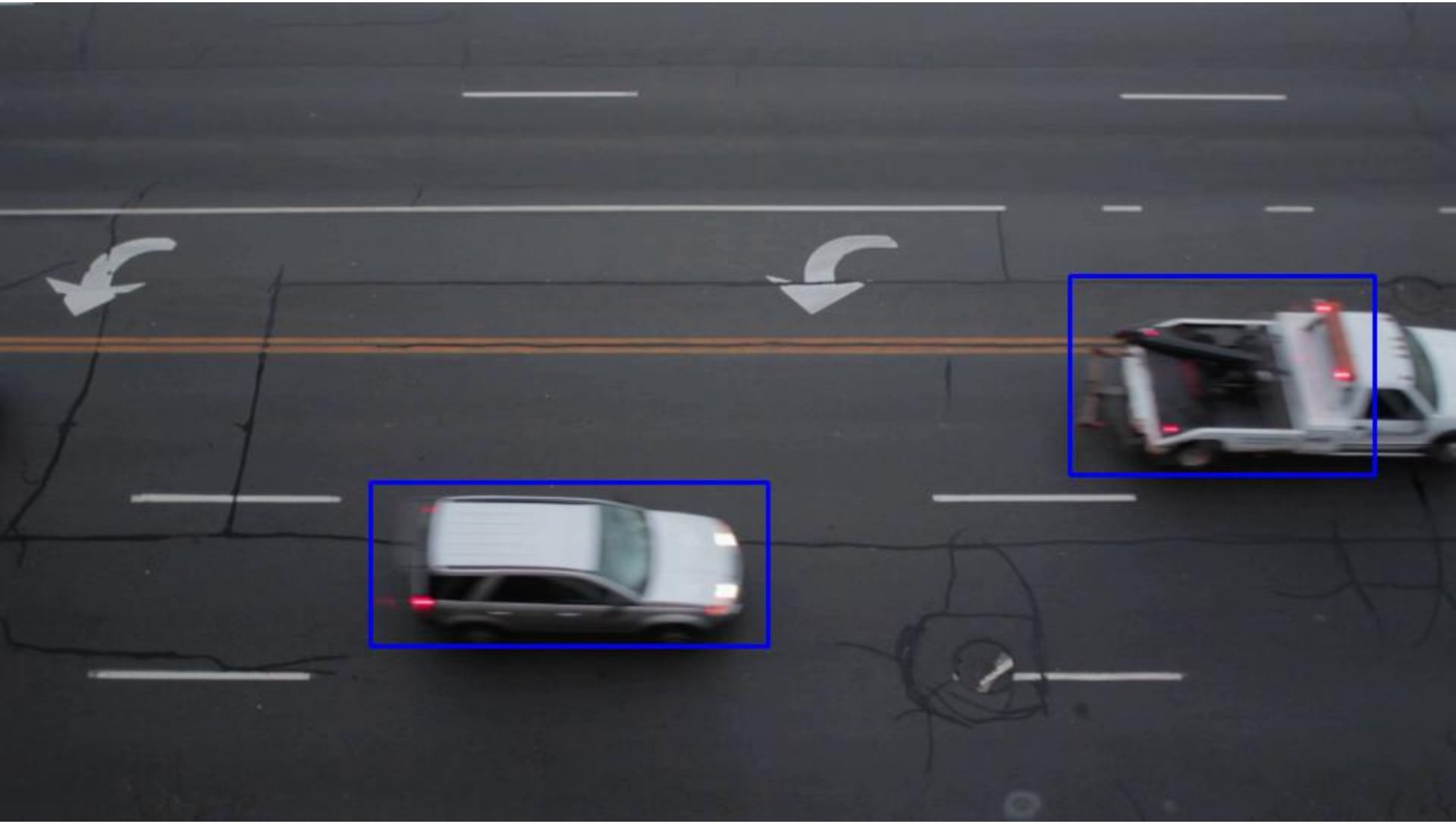


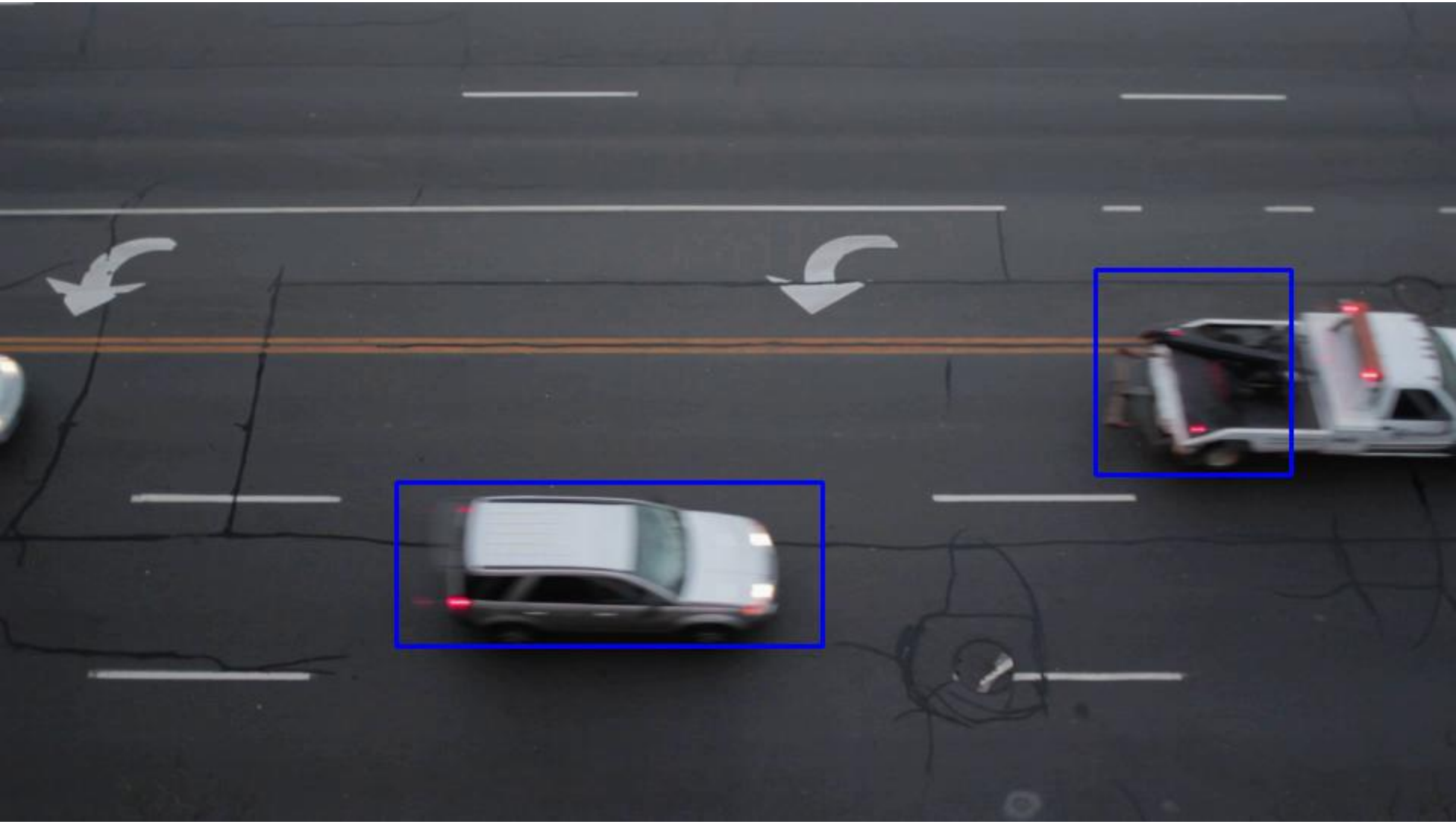


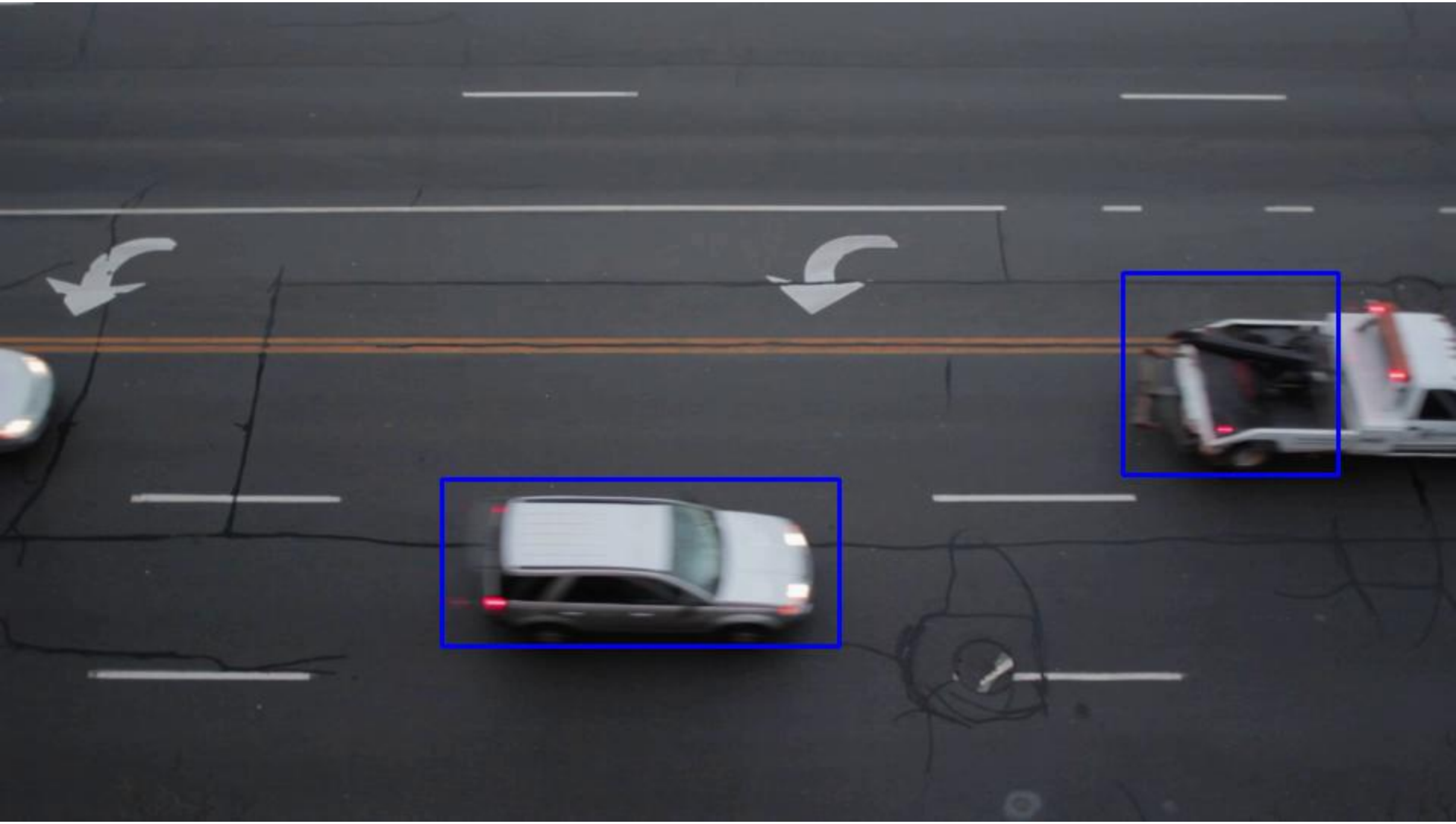


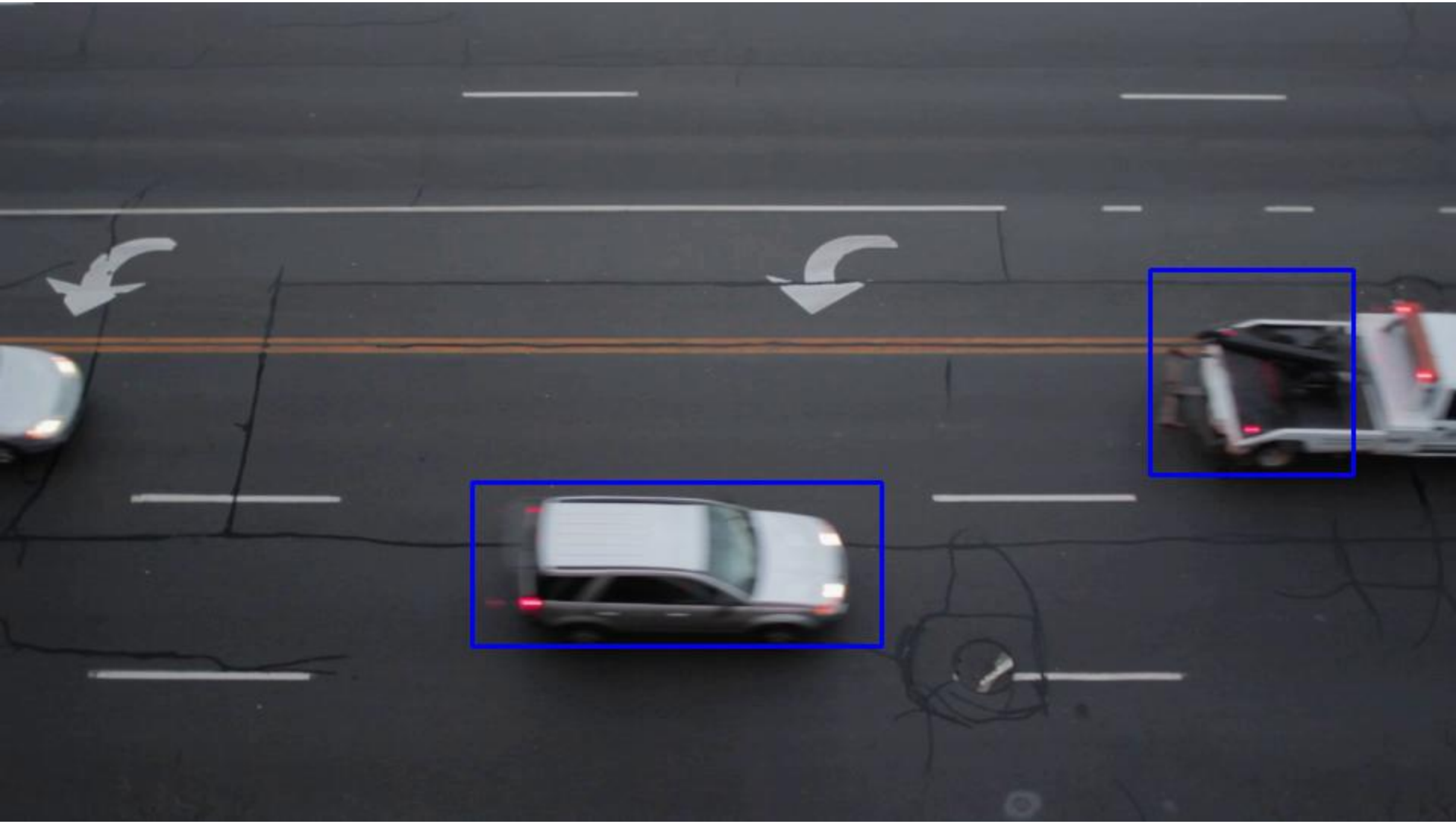


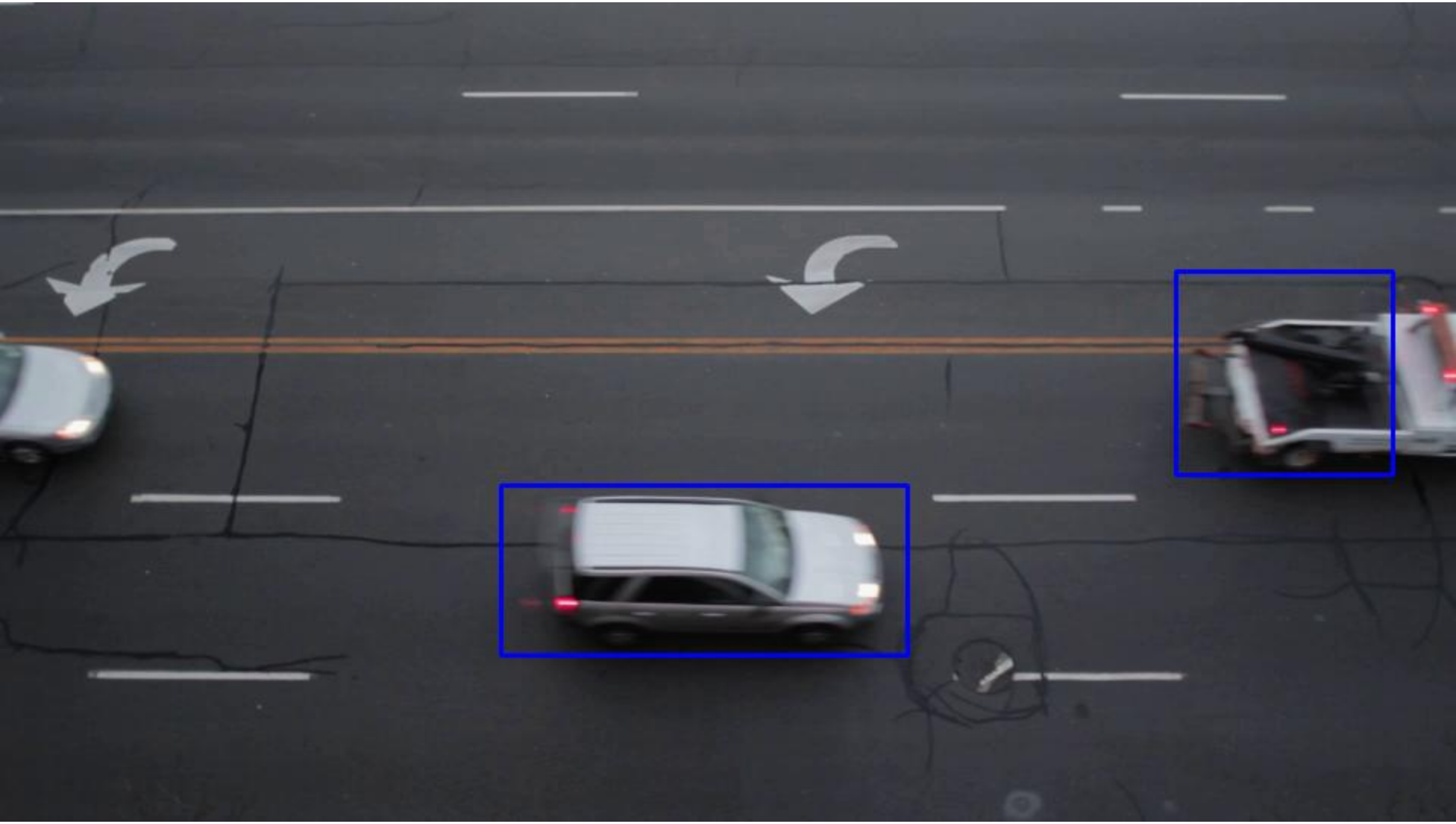


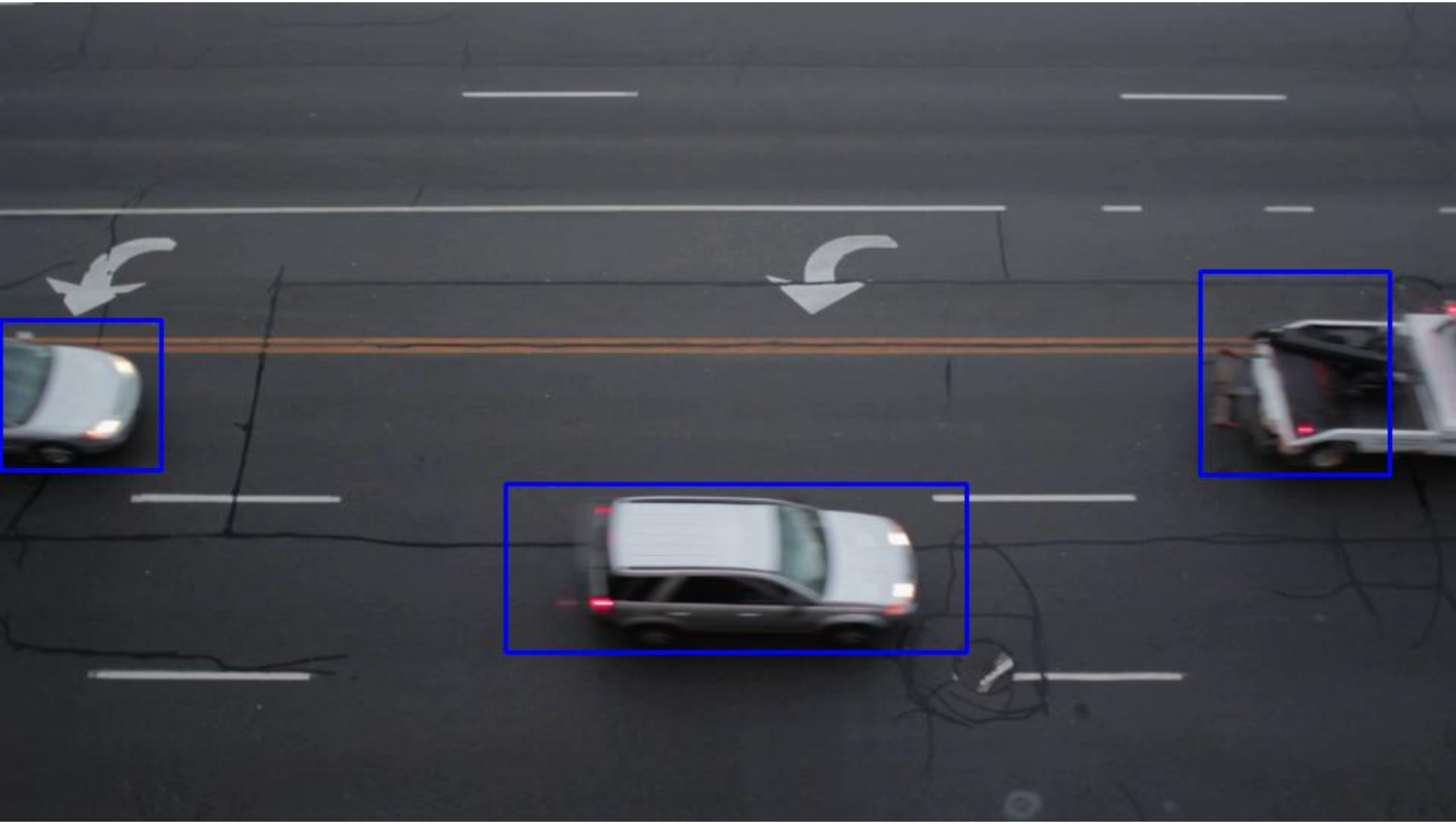


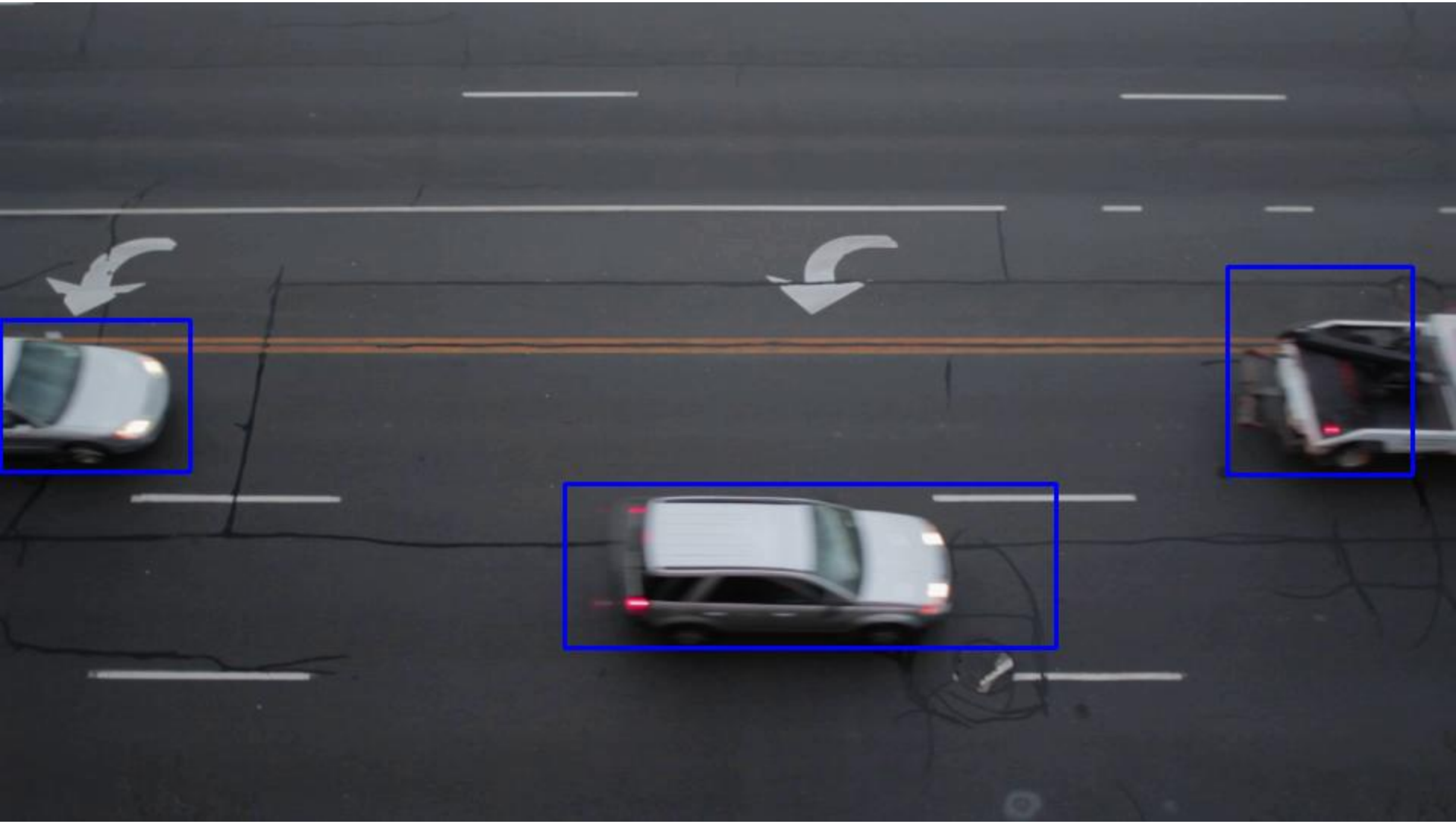


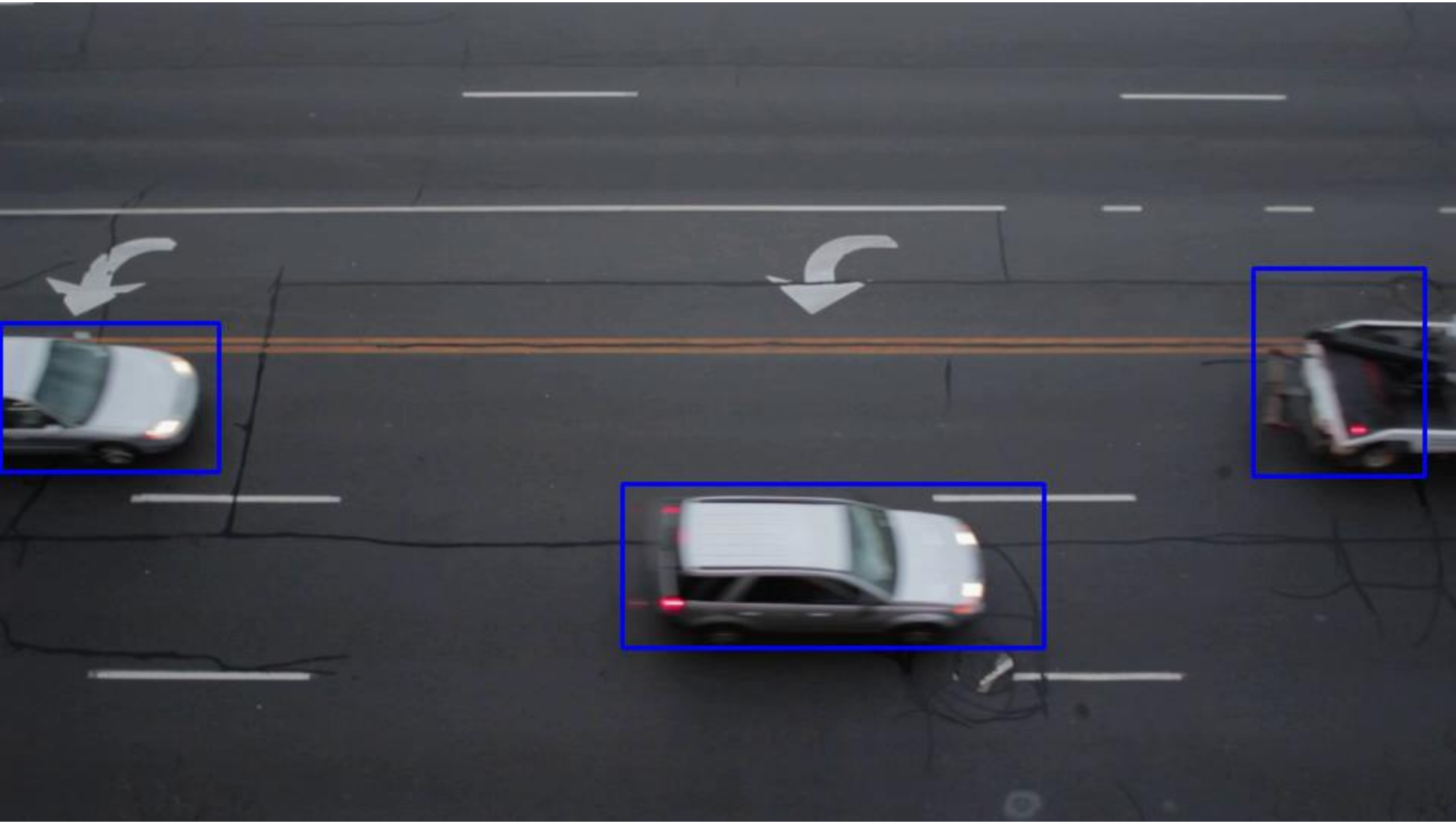












Application

- Vehicle counter
  - Minimize traffic light waiting time

How?

- Optical flow
  - We need 2 consecutive frames.

How?

- Optical flow

Image #1

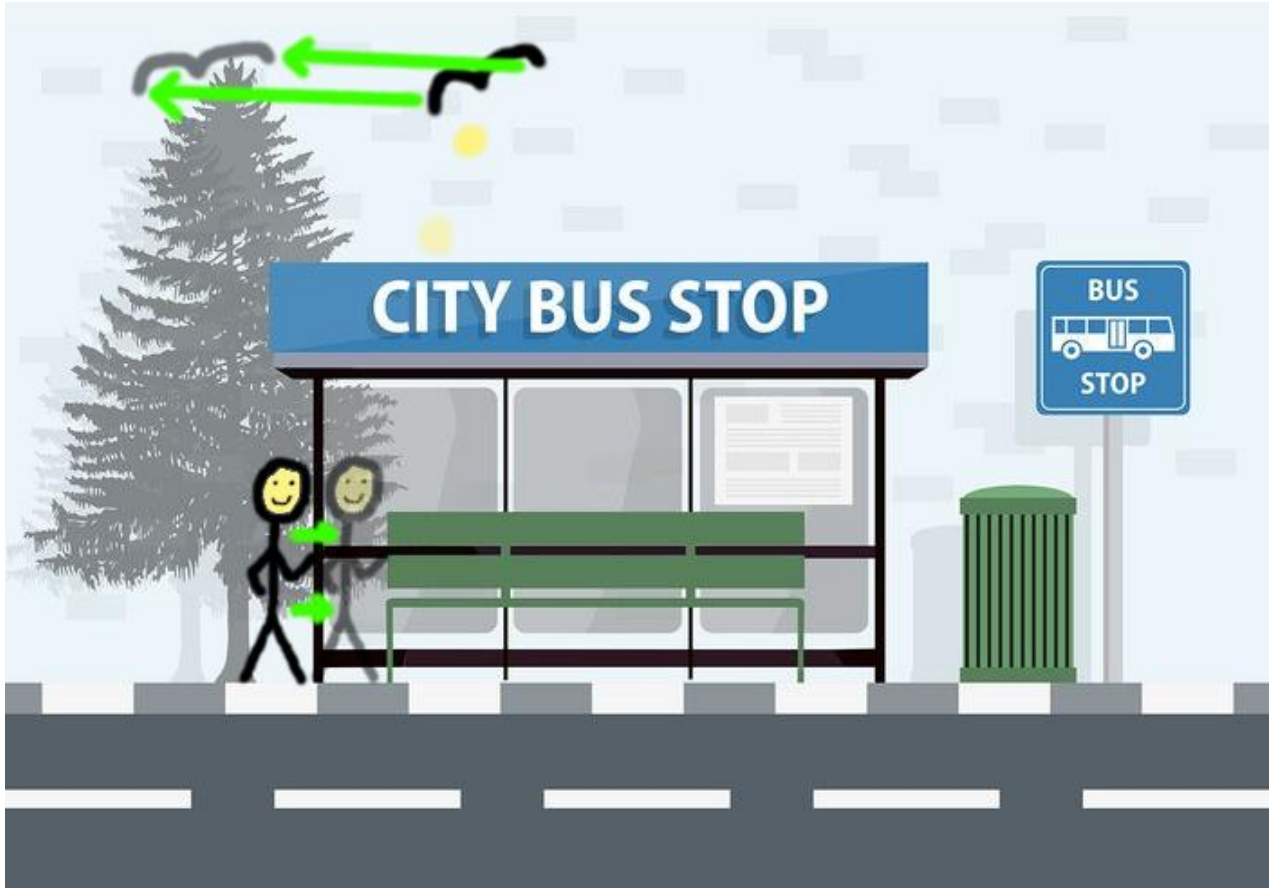
How?

- Optical flow

Image #2

How?

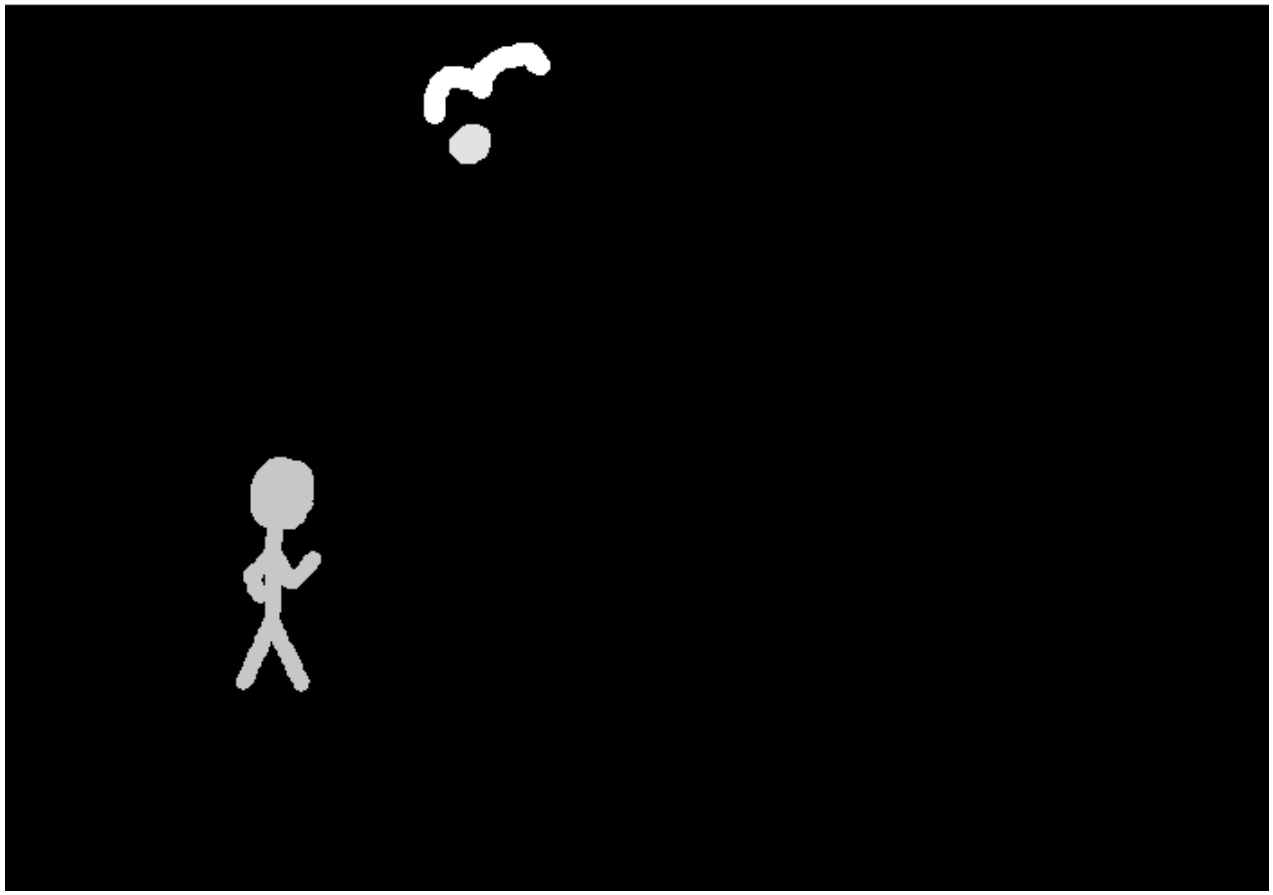
- Optical flow



Optical Flow

How?

- Optical flow



Optical Flow Magnitude

(black = no movement, white = big movement)

In real world

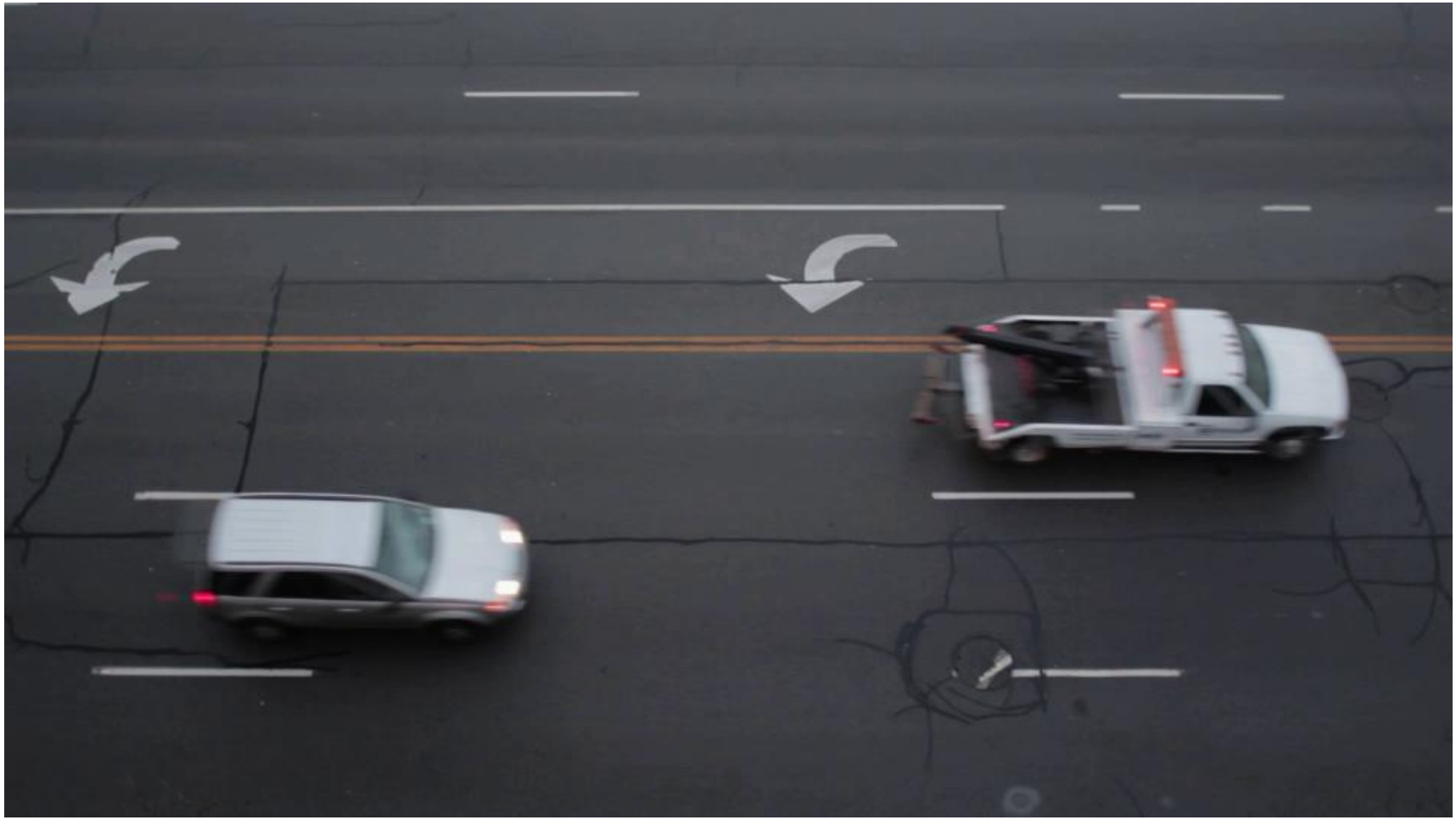


Image #1

In real world

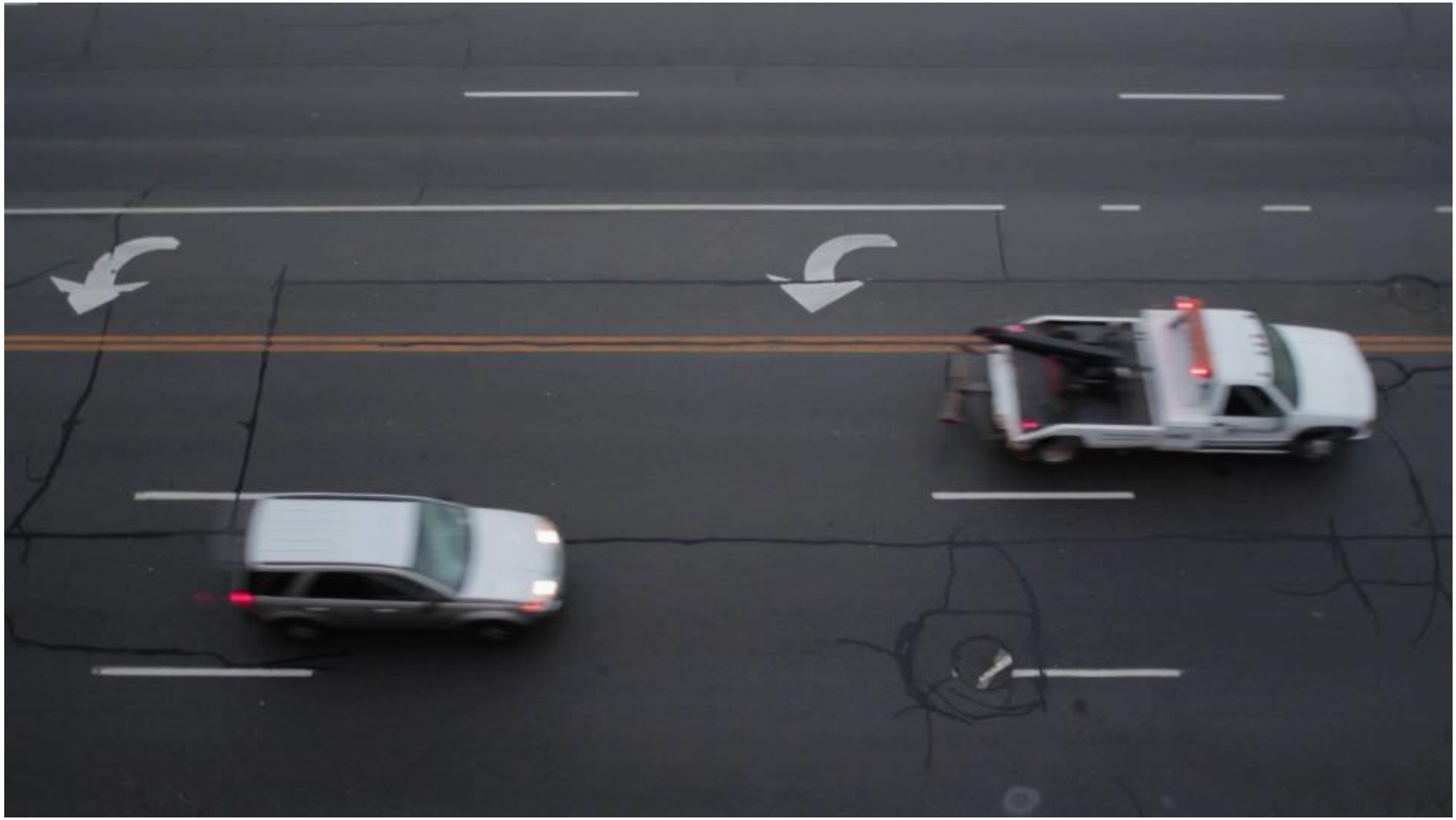
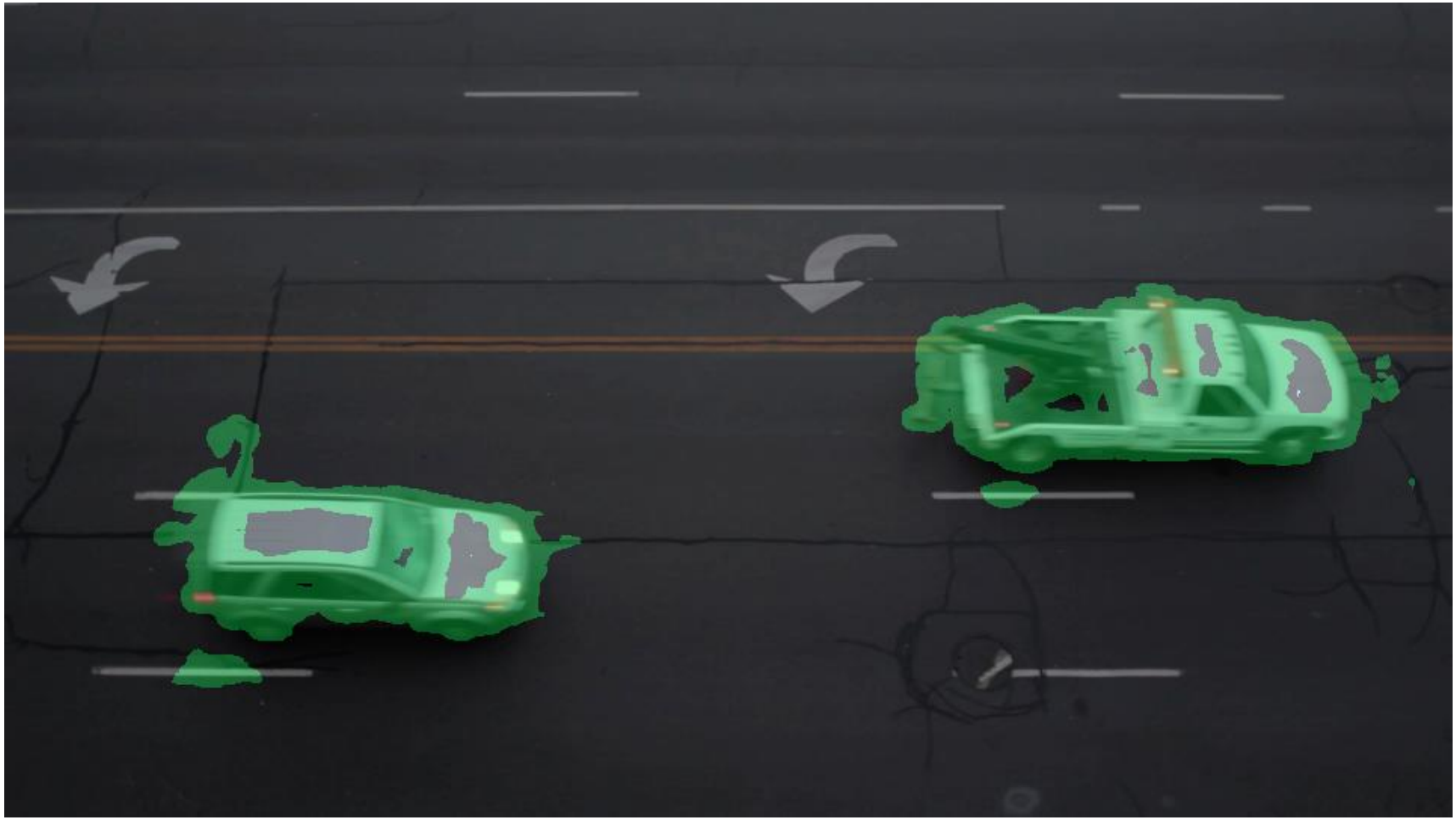


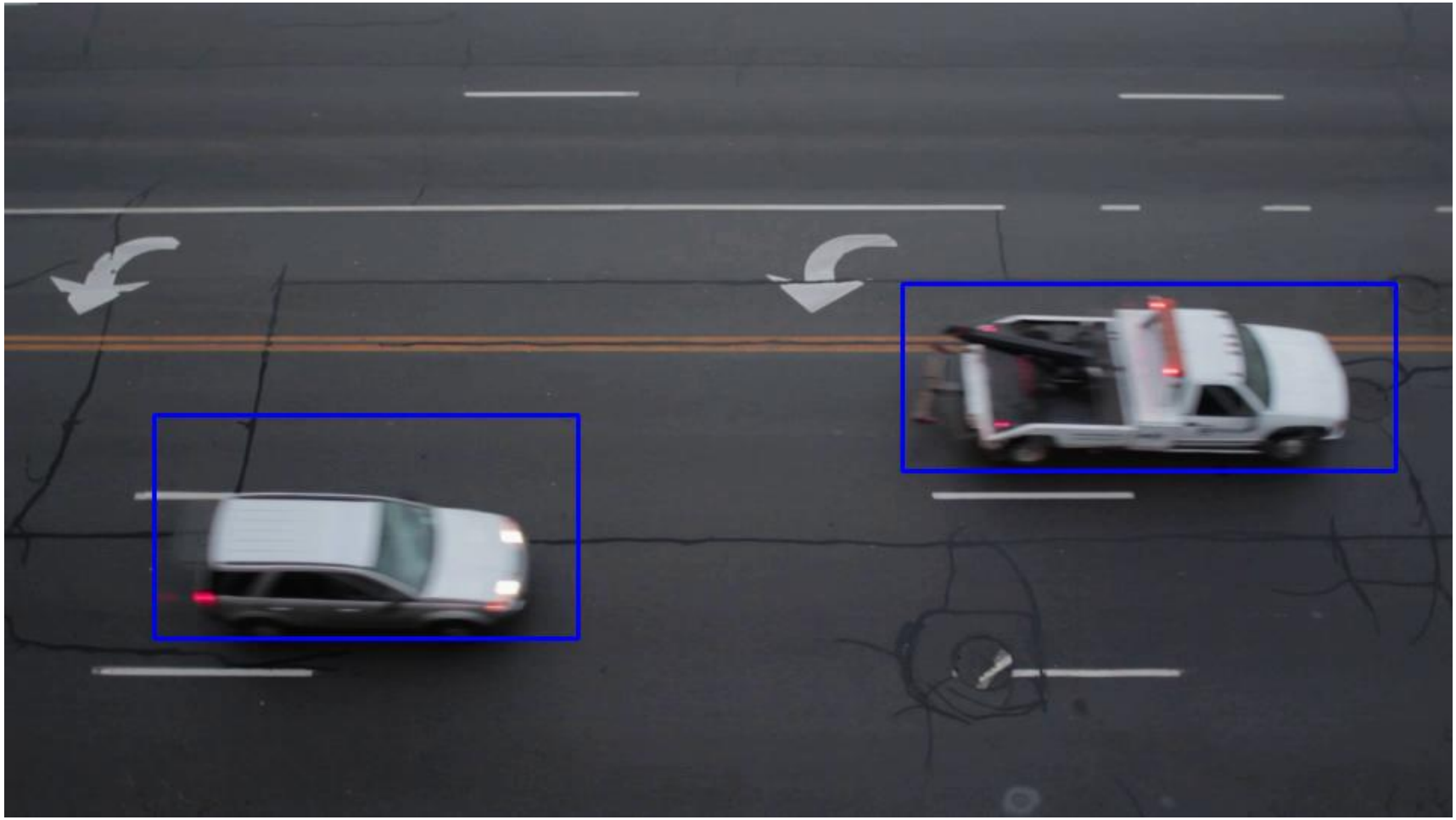
Image #2

In real world



Big optical flow was highlighted with green

In real world



+ Clustering and filtering

Problems

- Noise
  - Remove the moving areas that are too small