Start

Extract Ego vehicle and actor state information from sensor data

Check if actor in the same lane as ego

No

Categorize actors into right and left lane

Yes

No

Check if actor in front of ego

Calculate Time To Collision (TTC) for each actor

Ignore the actor

(backside of ego)

Yes

Yes

Yes

Yes

No

Yes

No

Front actor Vel < Ego Vel < Desired Vel

Both True

Safety Check

TTC > Threshold

Lane available ?