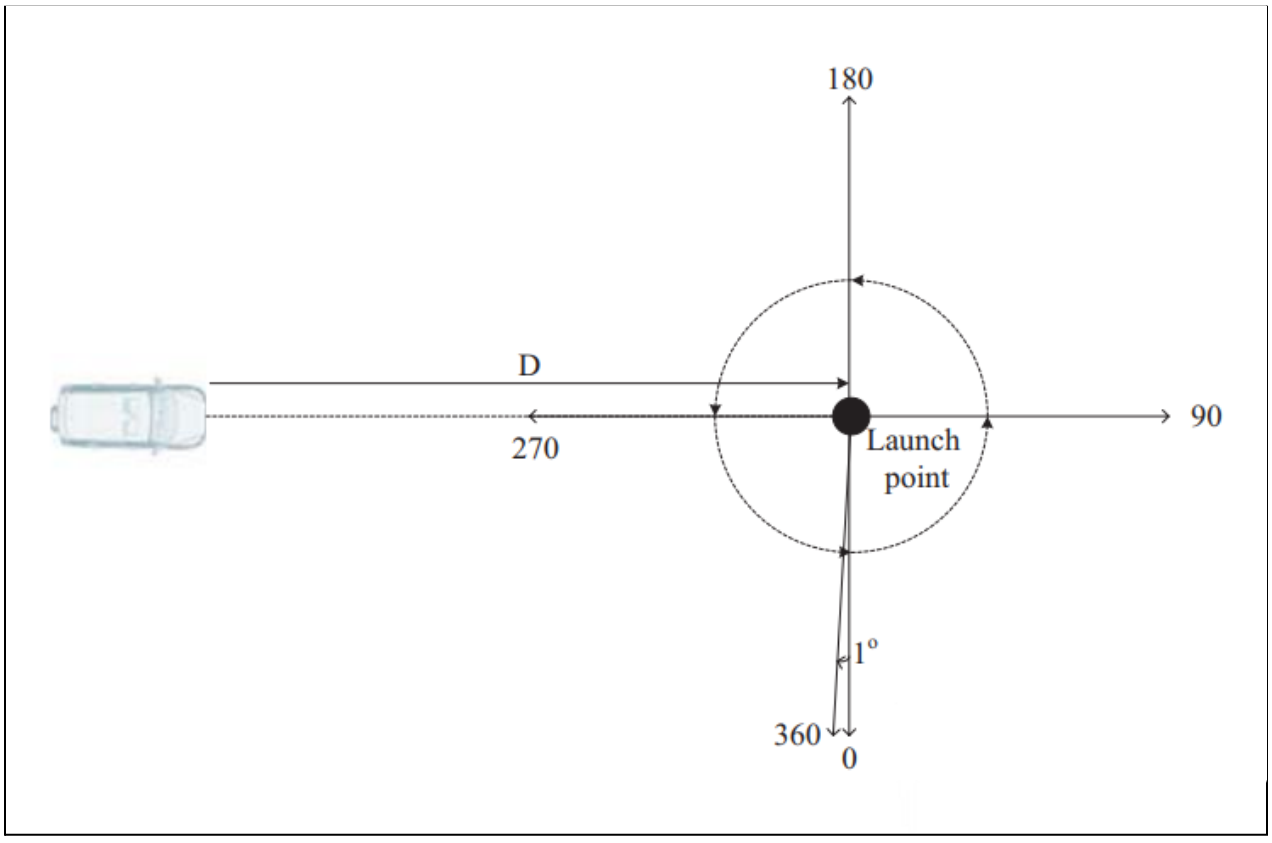
3D LIDAR Point Cloud based Intersection Recognition for Autonomous Driving

1. A grid map for each frame of data is made
2. Based on variance in elevation we get a Bird eye view (i.e 2 D view (fig attached))
3. We try to detect and remove the pedestrians and vehicle from the image
4. We do analysis with our 2-D image we have obtained

CONSTRUCTION

Here beam is projected from a adaptive distance from the car , Thus we can if car is going faster we need to take decision earlier so we can respond accordingly so its advantageous to have an adaptive distance for placing the sensor



TYPE OF INTERSECTION

For a straight road : we have 2 peaks as we have high values of L only in a range close to 0 and 180 degree
For a 4 way cross-section: we have 4 peaks in an angle range of 0 90 180 270 .

Thus using no of peaks and shape we can do classification