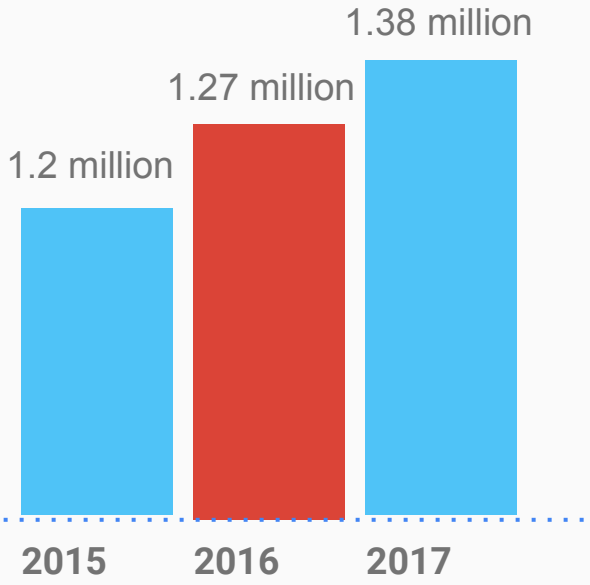
Rain Rain Go Away

Team Alchemists

Mission statement: Rain removal on video feed for improving safety aspect of driving in bad weather

The problem

1) Poor visibility while driving in rainy conditions increasing accident rates.
2) Driverless cars use object detection algorithms on video feed to “see” obstacles around them, these work poorly in rainy weather conditions.

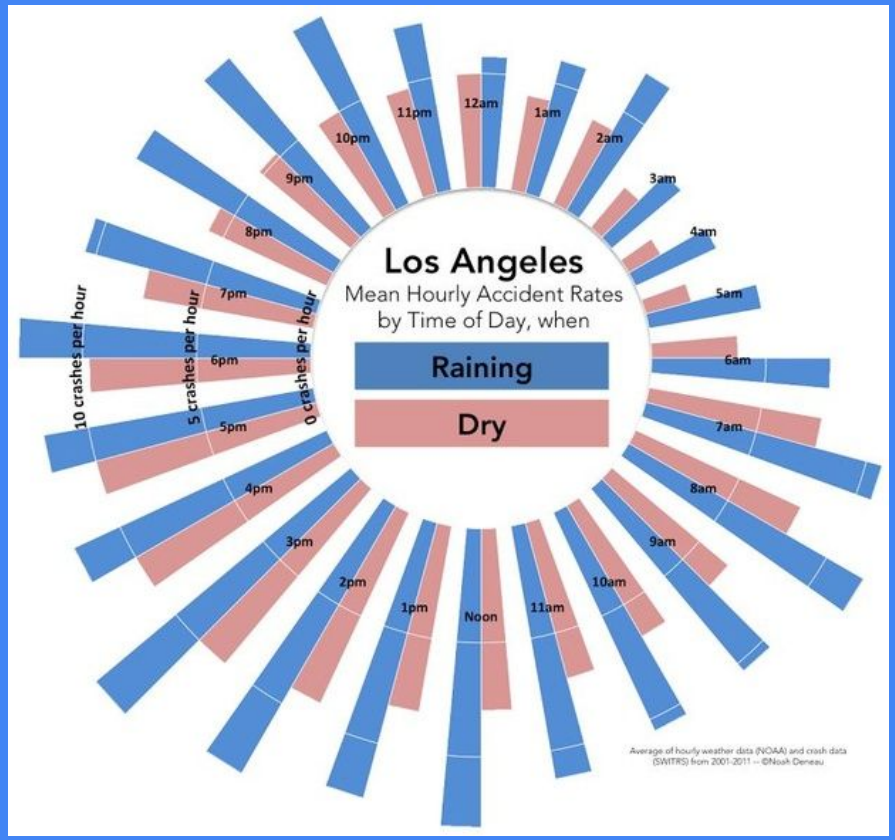


Total Rain related Accidents in the US

The solution

Removing rain streaks from the video feed using supervised CNN. A dashboard cam will show the rain free output video.

Why?



6 million weather-related vehicle accidents take place every year, 45% of them related to rain mainly due to low visibility. We aim to lower these rates. In case of driverless cars, reliability of system is very low in rainy conditions. We aim to improve the accuracy of the driverless car algorithms by preprocessing the video feed to remove noise caused by rain.

How it works

Step 1

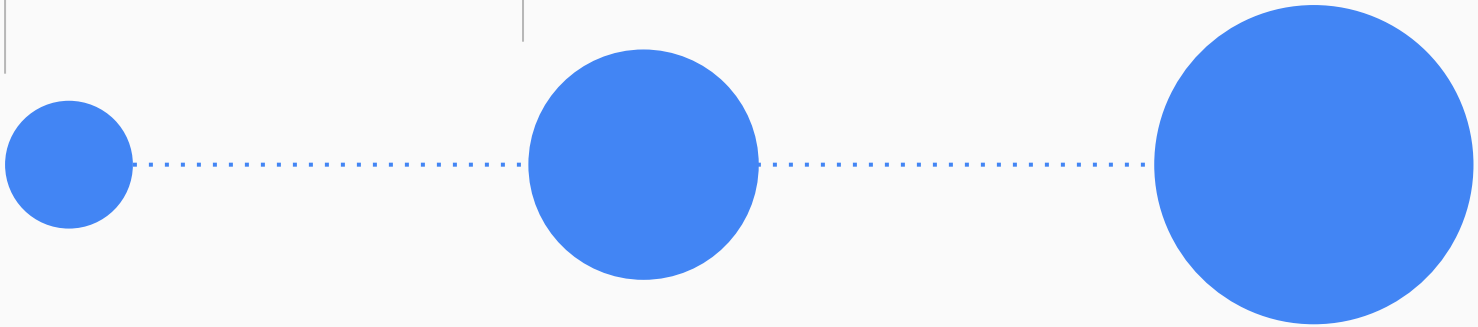
Frame by frame retrieval of video

Step 2

Real-time frame processing

Step 3

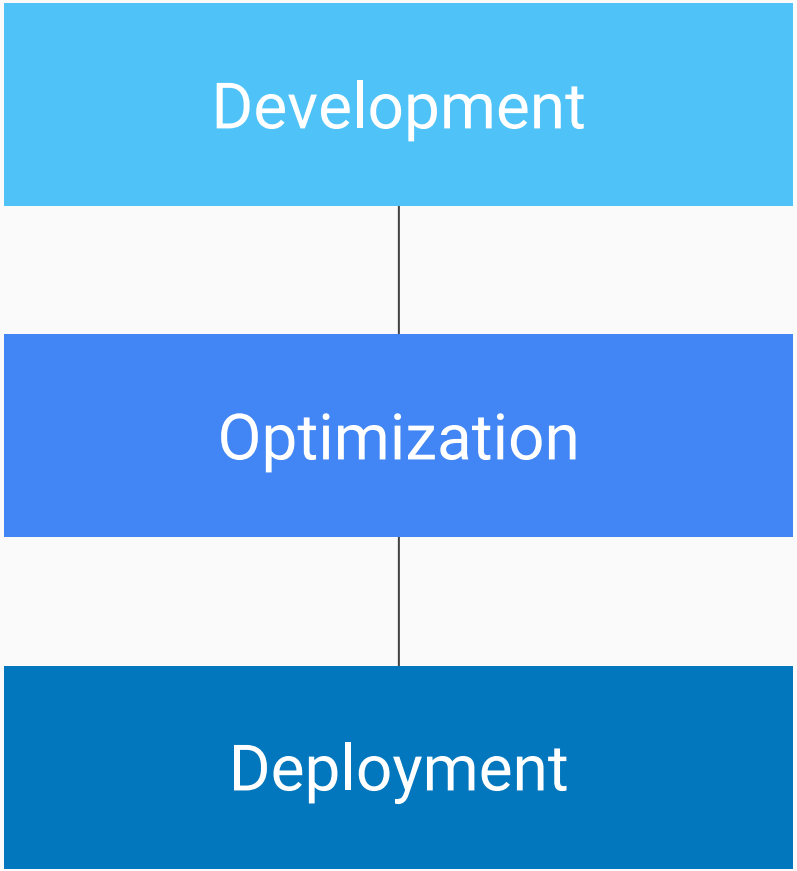
Simultaneous object detection frame input




The technology:
Convolutional
Neural Networks

Revenue model

Targeted towards automotive manufacturers involved in production of cars.



Features in future:
Headlight glare removal at night, fog removal, sharpen features