Self-Driving Cars

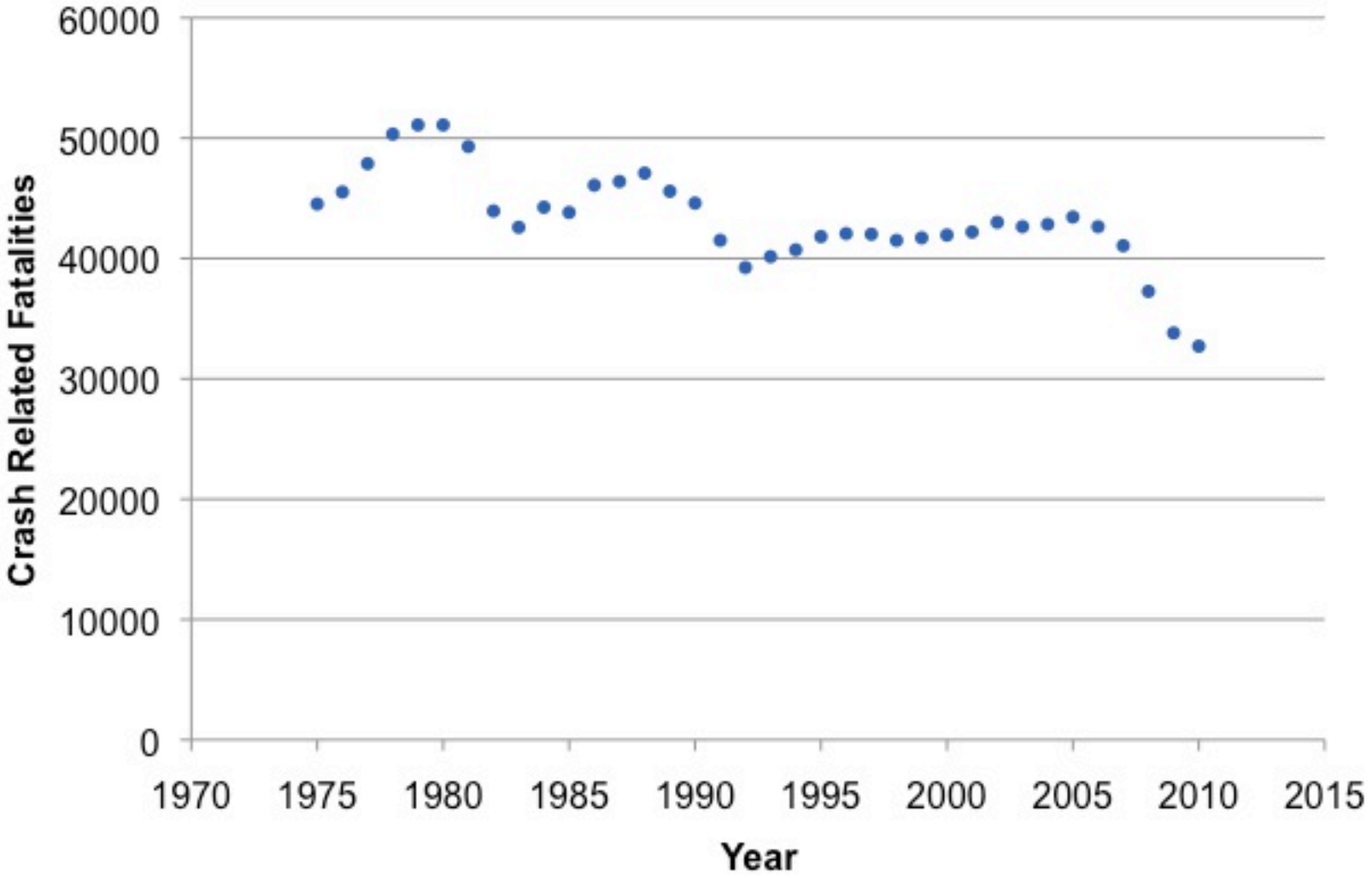
PCAST Briefing, Washington DC, May 2012

Alex

Google

Toyota Prius Saved Alex

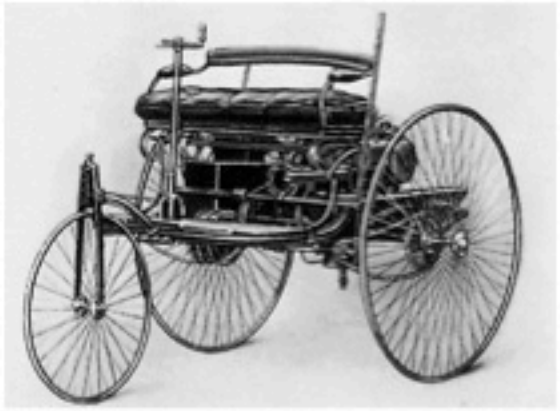
We make a big difference



Google

Perspective

What would cars be like today if the computer would have been invented before the car?



Benz Patent-Motorwagen

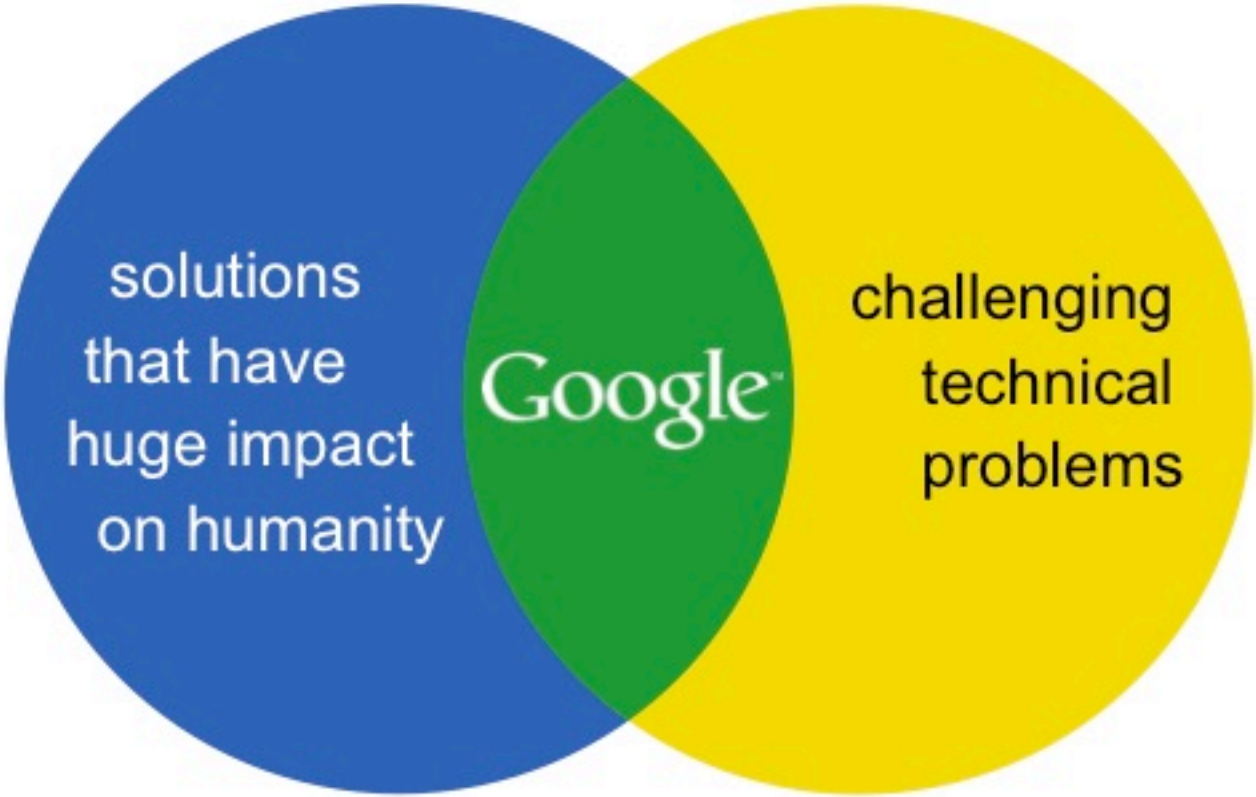
1885

Apple II

1977

Google

Why Google?

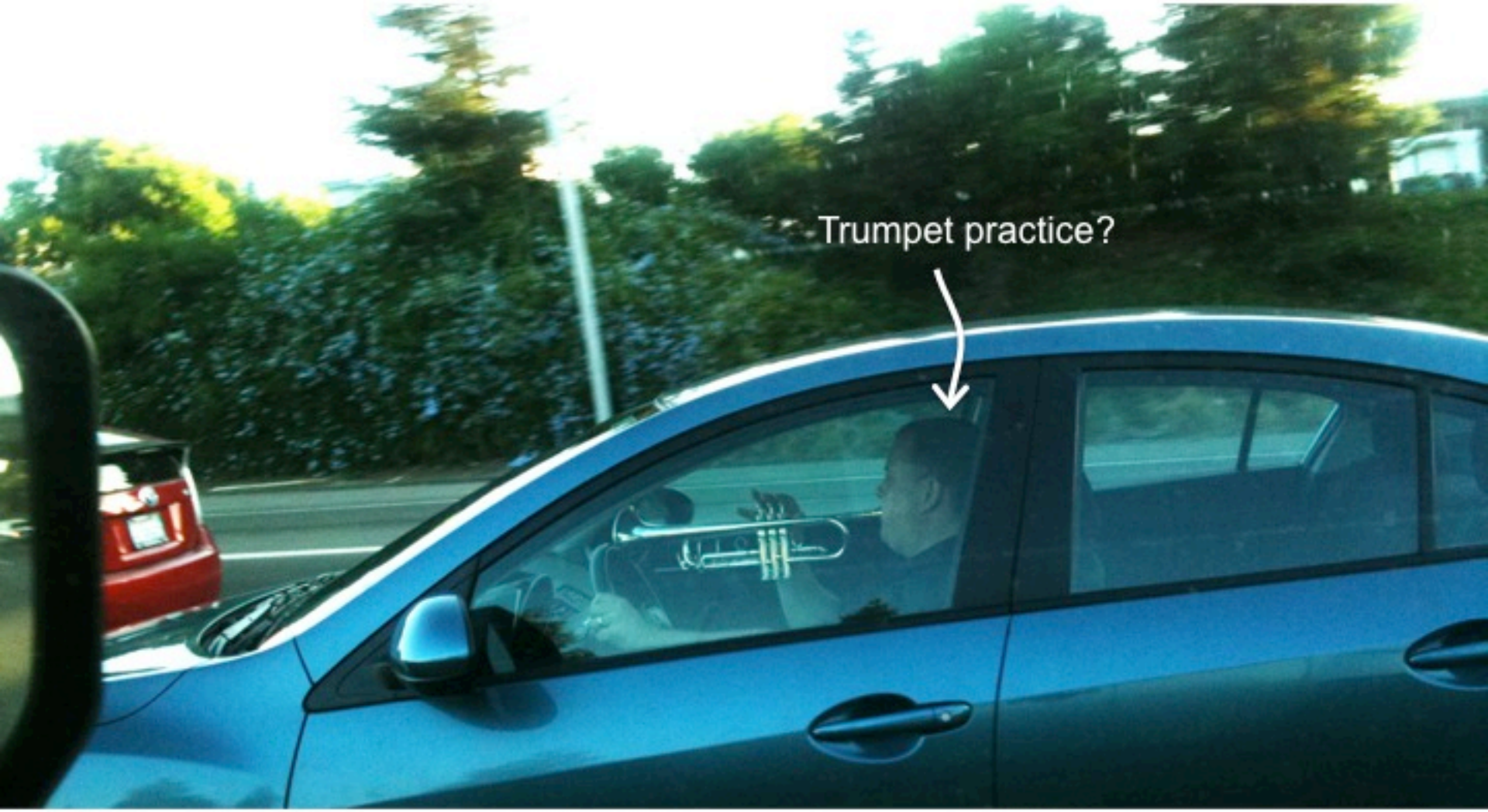

solutions
that have
huge impact
on humanity
Google
challenging
technical
problems

Driving as the distraction

"For some, driving is the distraction"

- Allan Taub, ex-VP GM

People already living in their cars



Self Driving Car: 1957

Google

2005

Google

2012

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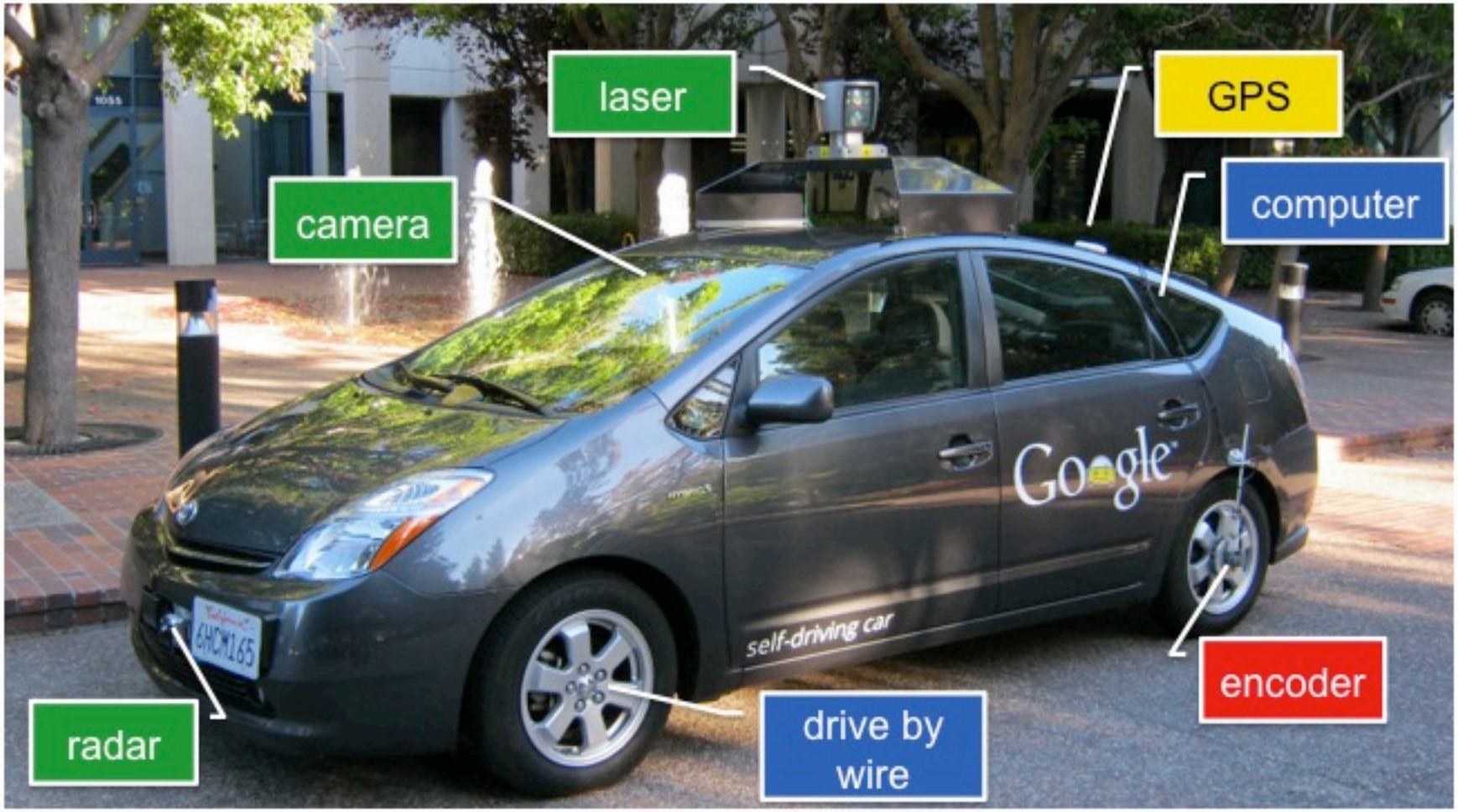
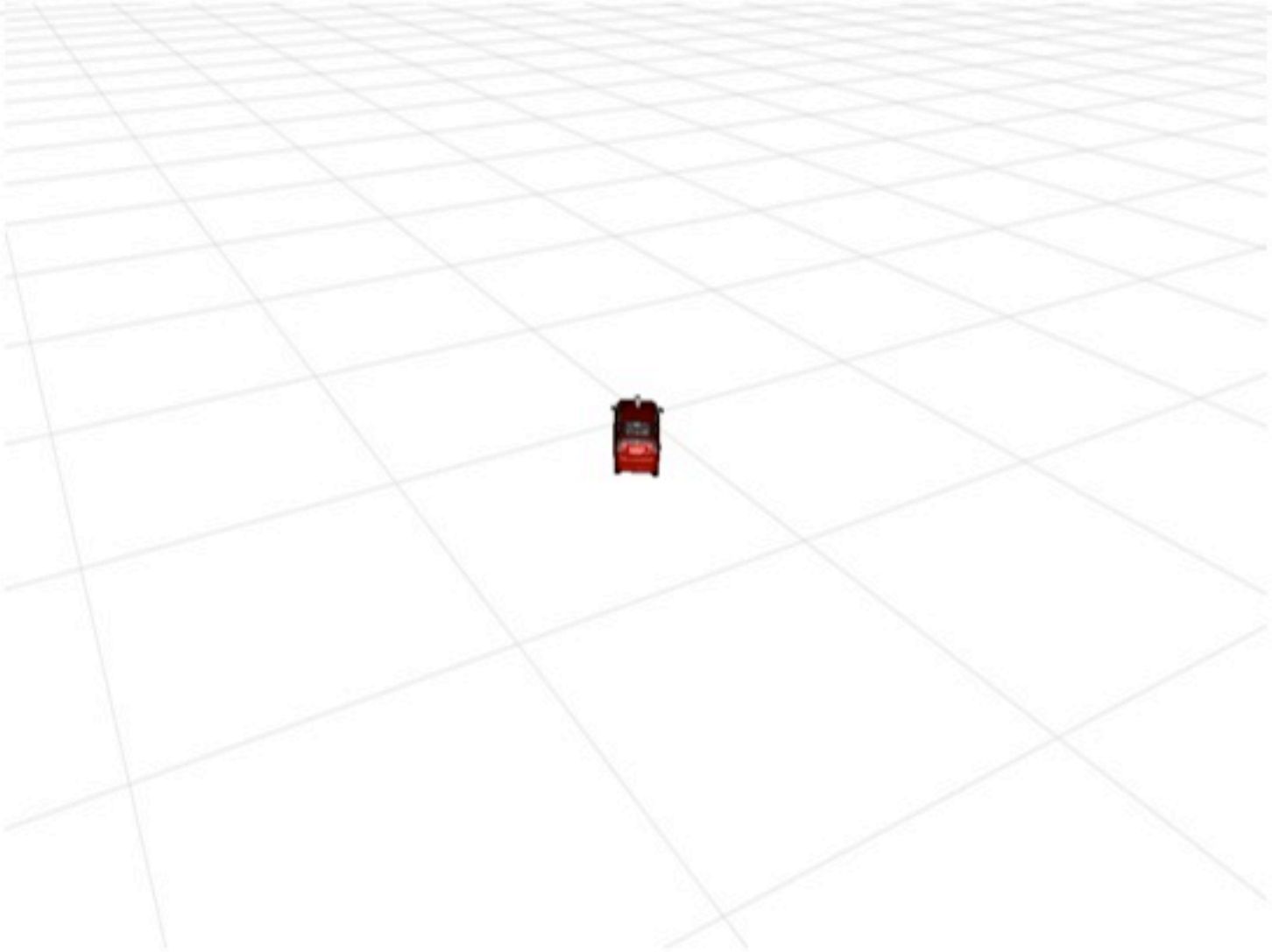
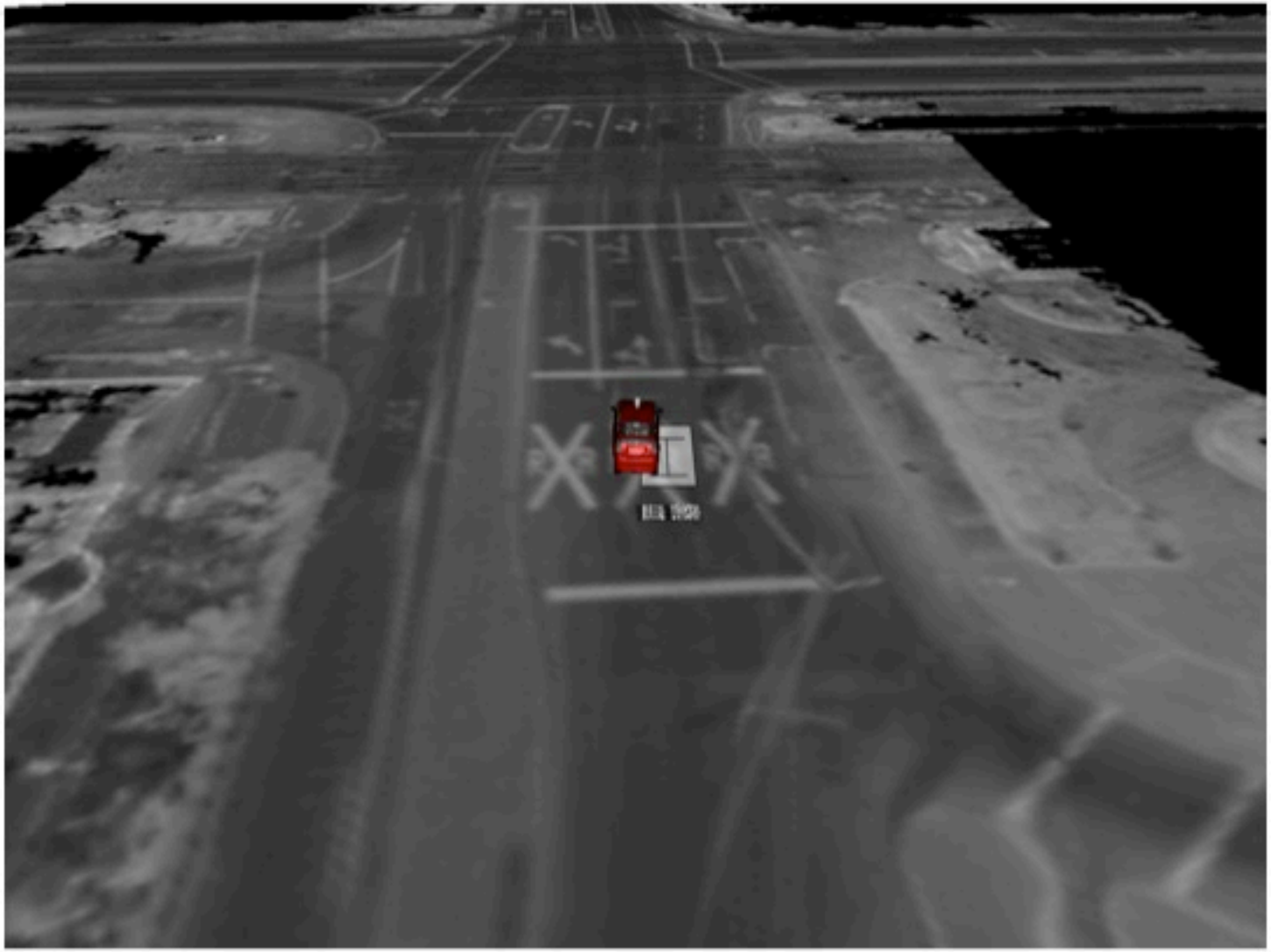
It's all about safety

- >90% of collision caused by human error
- 32,788 fatalities per year in 2010
- ~1,500,000 per year world wide

Outside of test car







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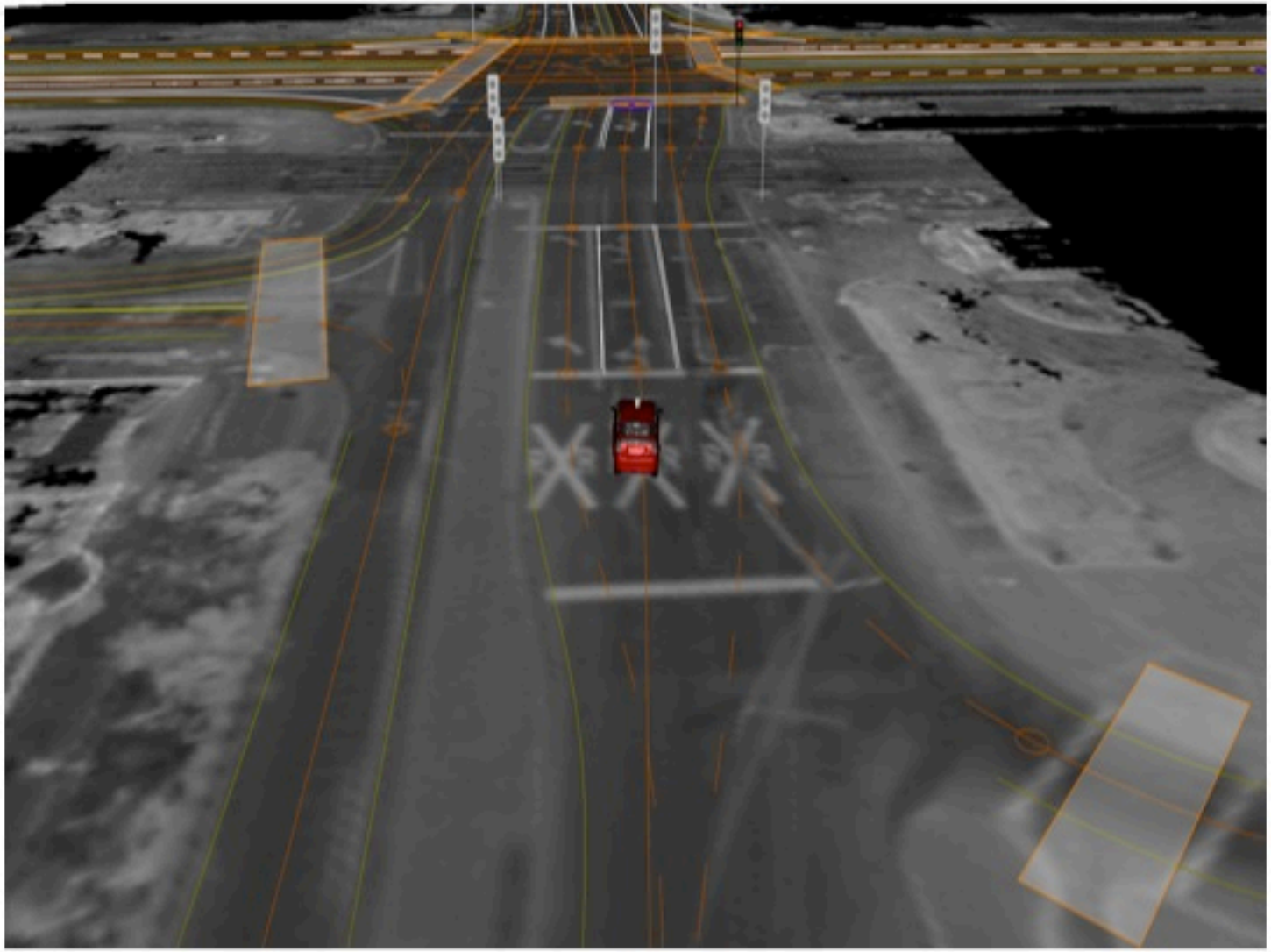

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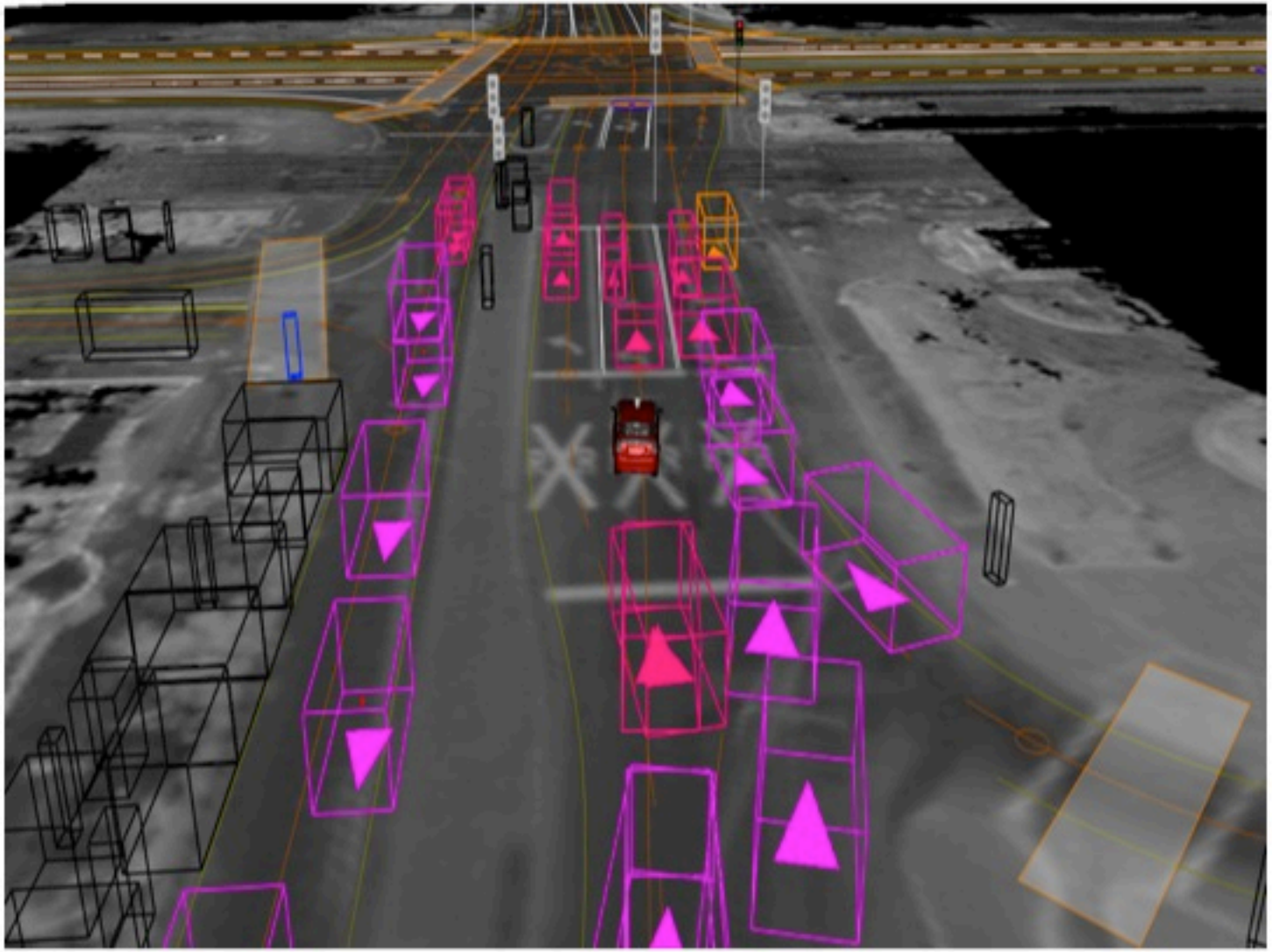

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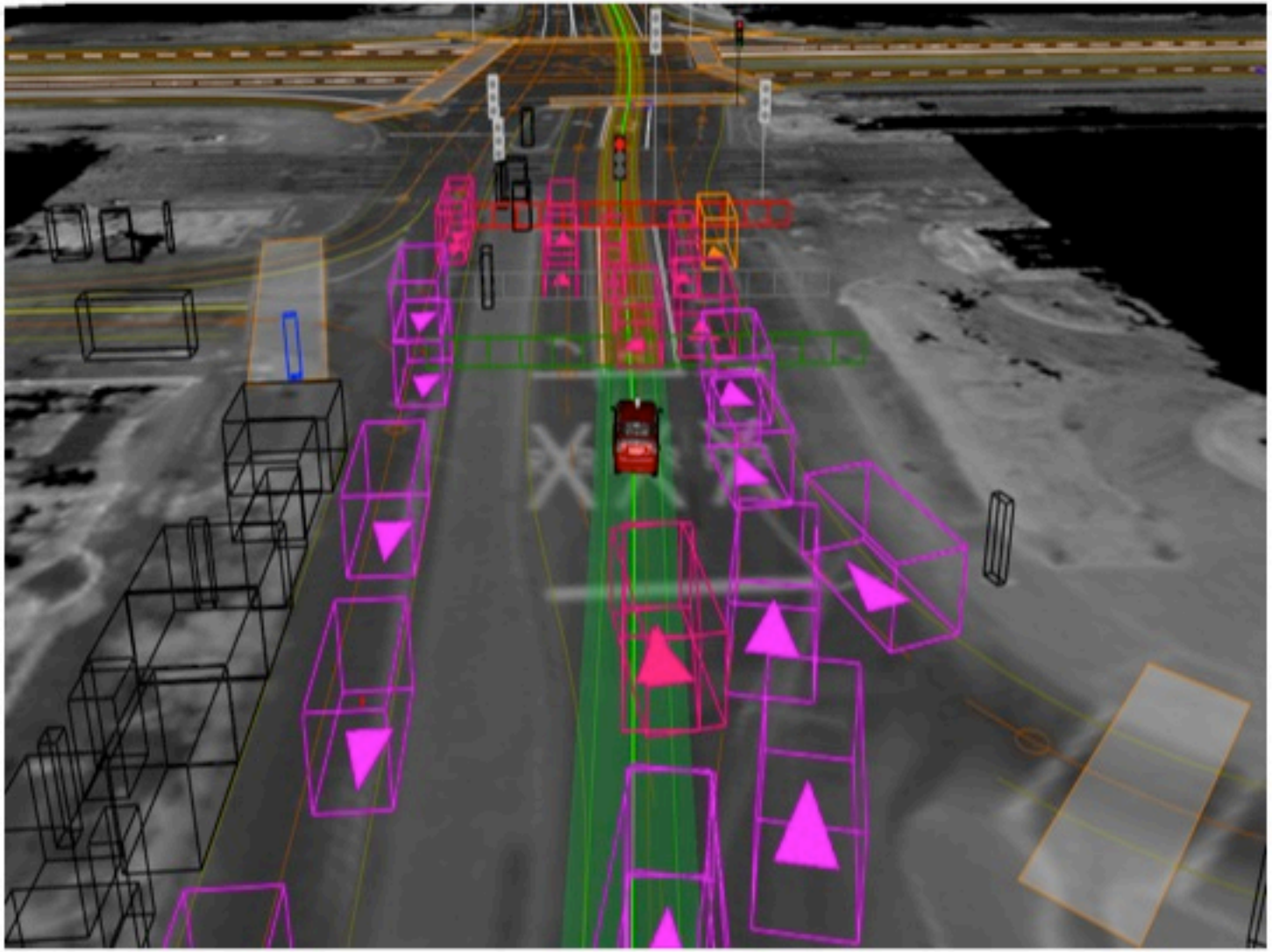

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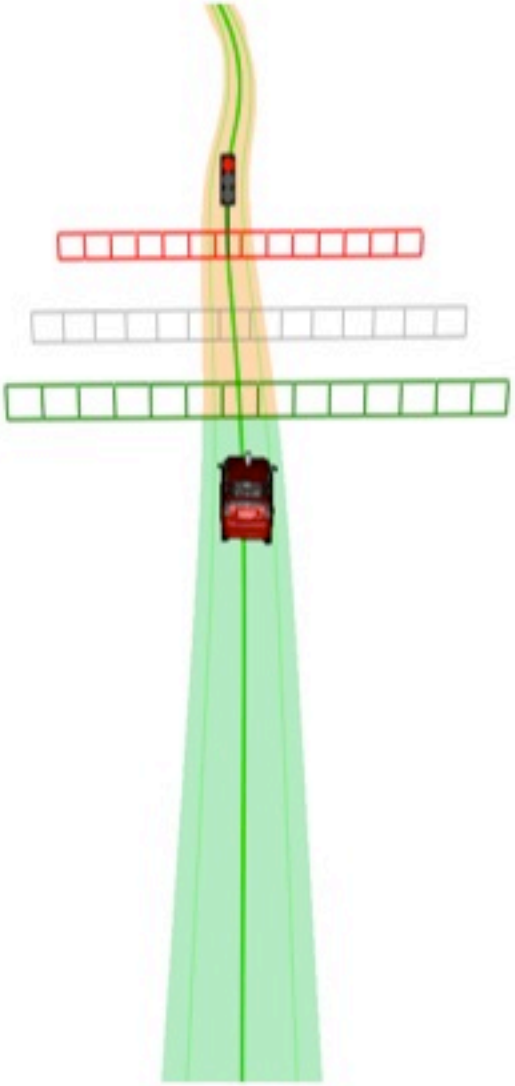
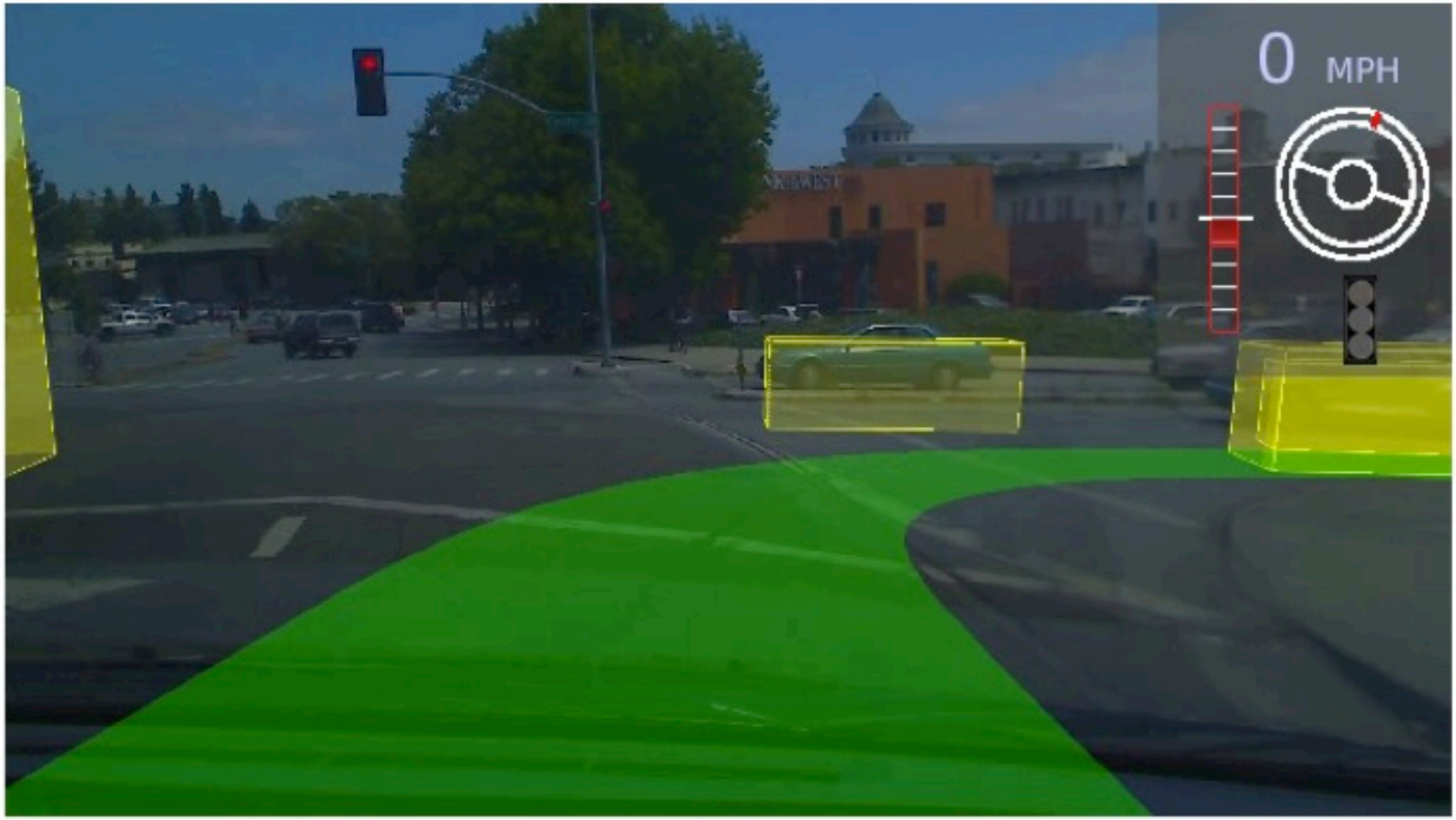


What does the car “see”



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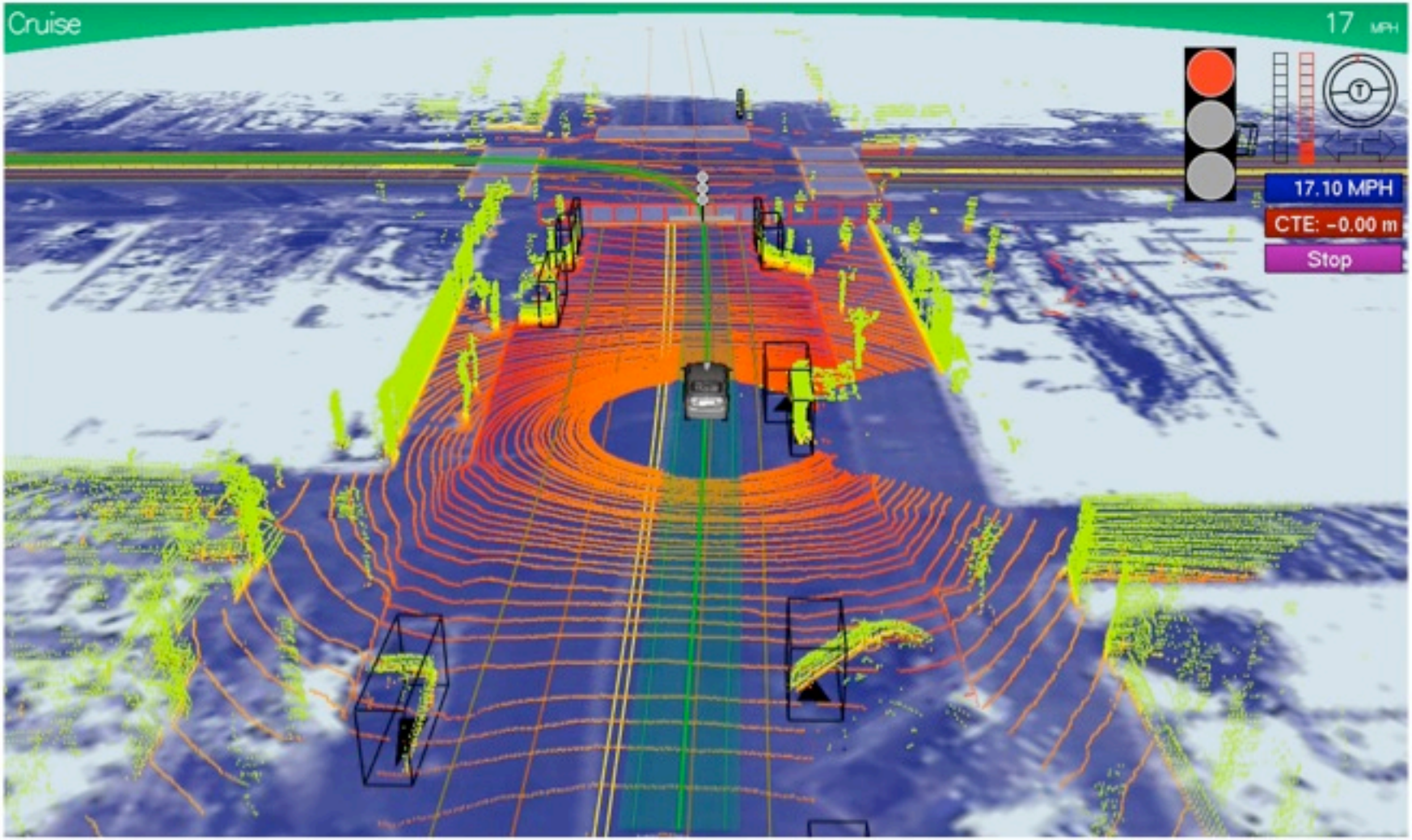

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Suburban Streets w/ Joggers

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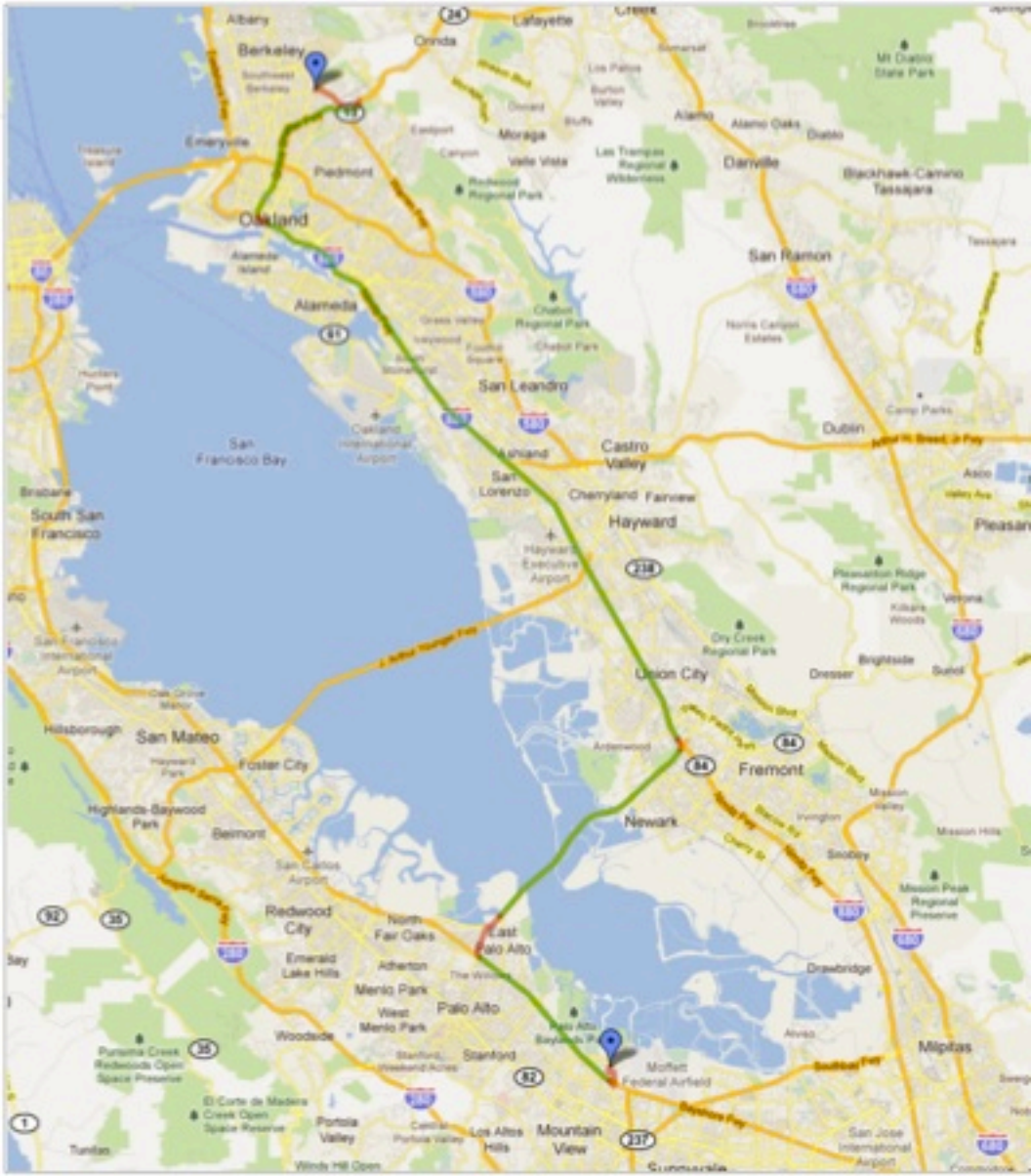
Dogfooding

My Commute

- 14 minutes driving
- 45 minutes “autodriving”
- 8 control transfers



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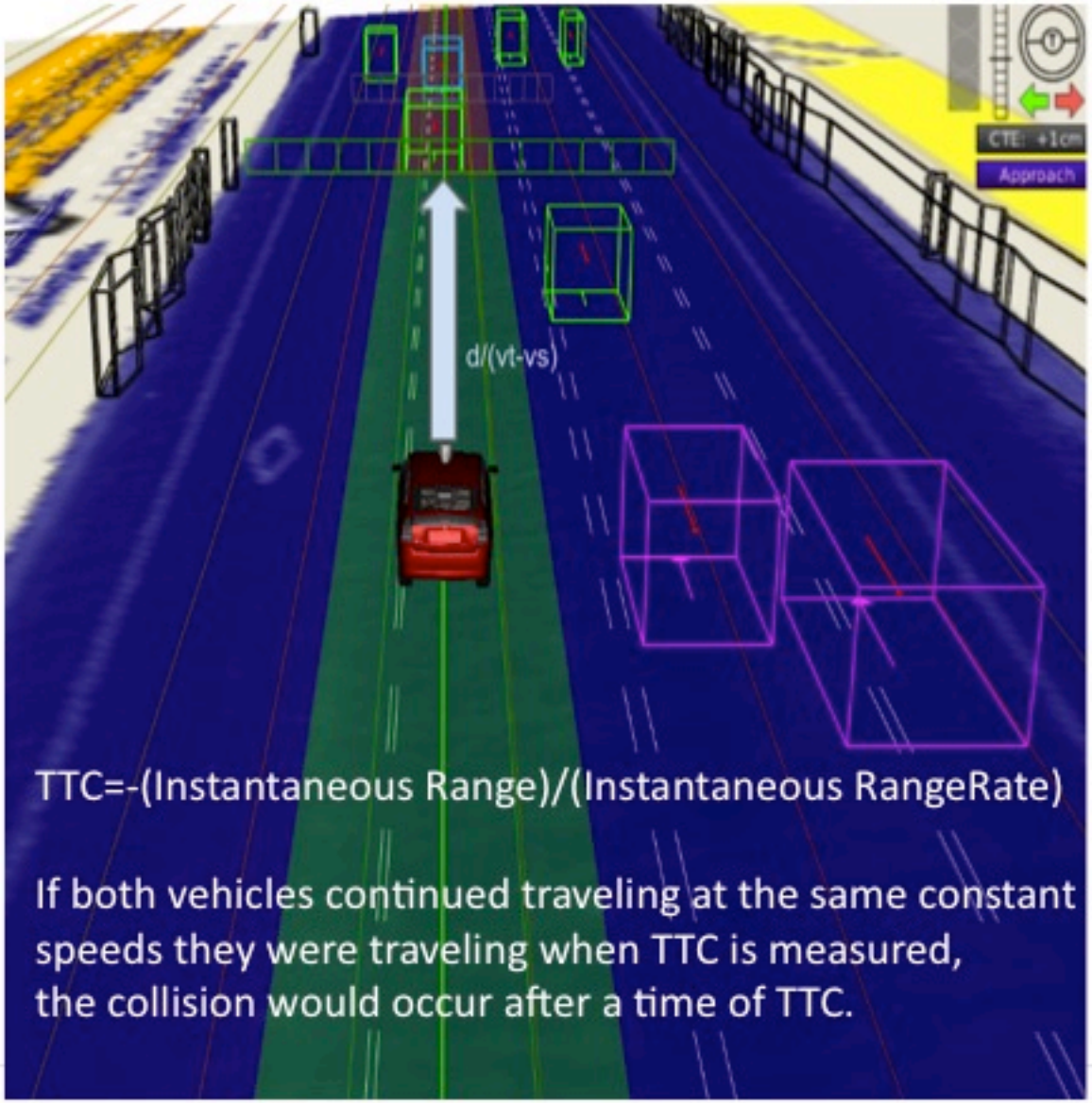
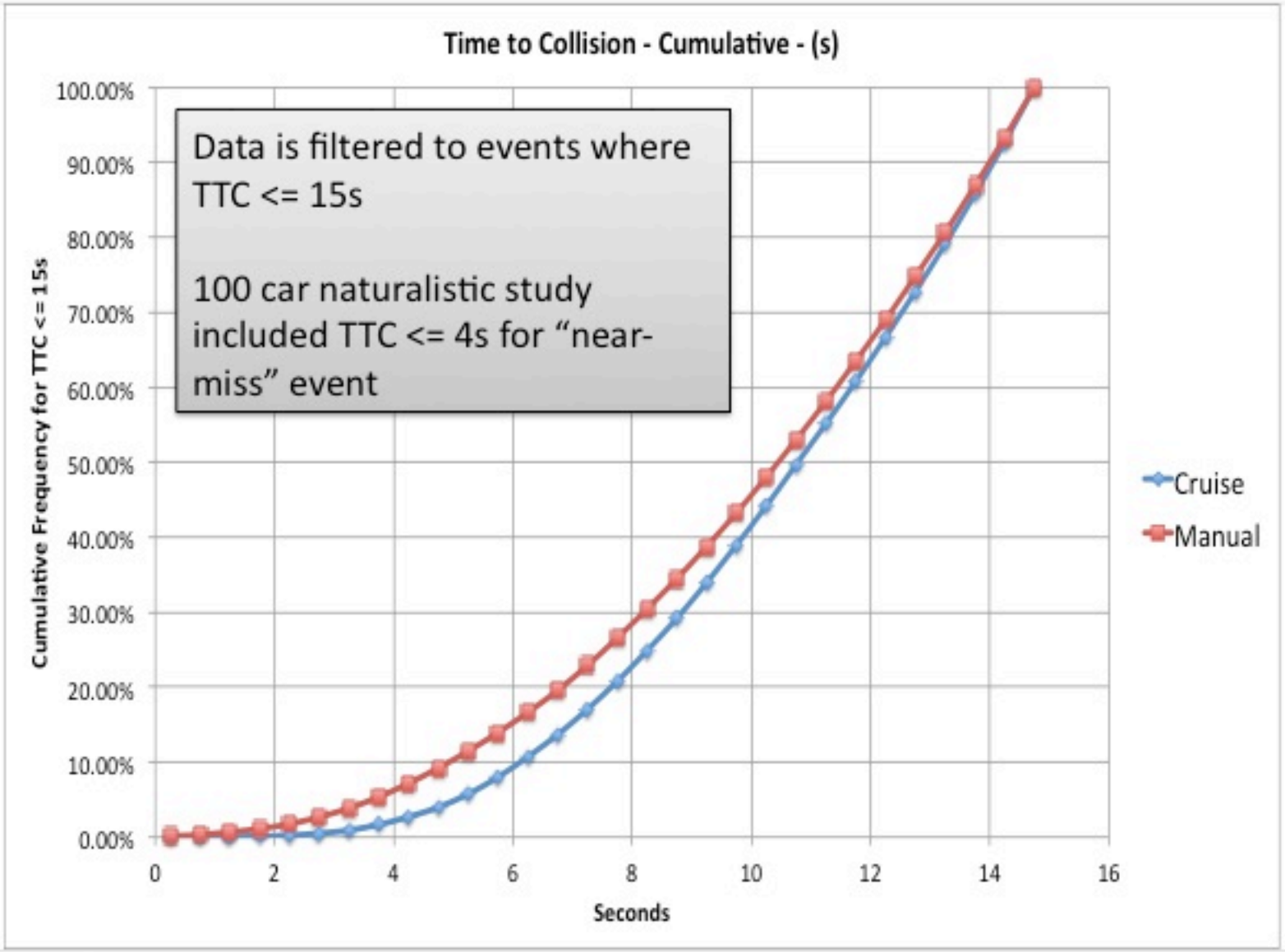
Time to Collision

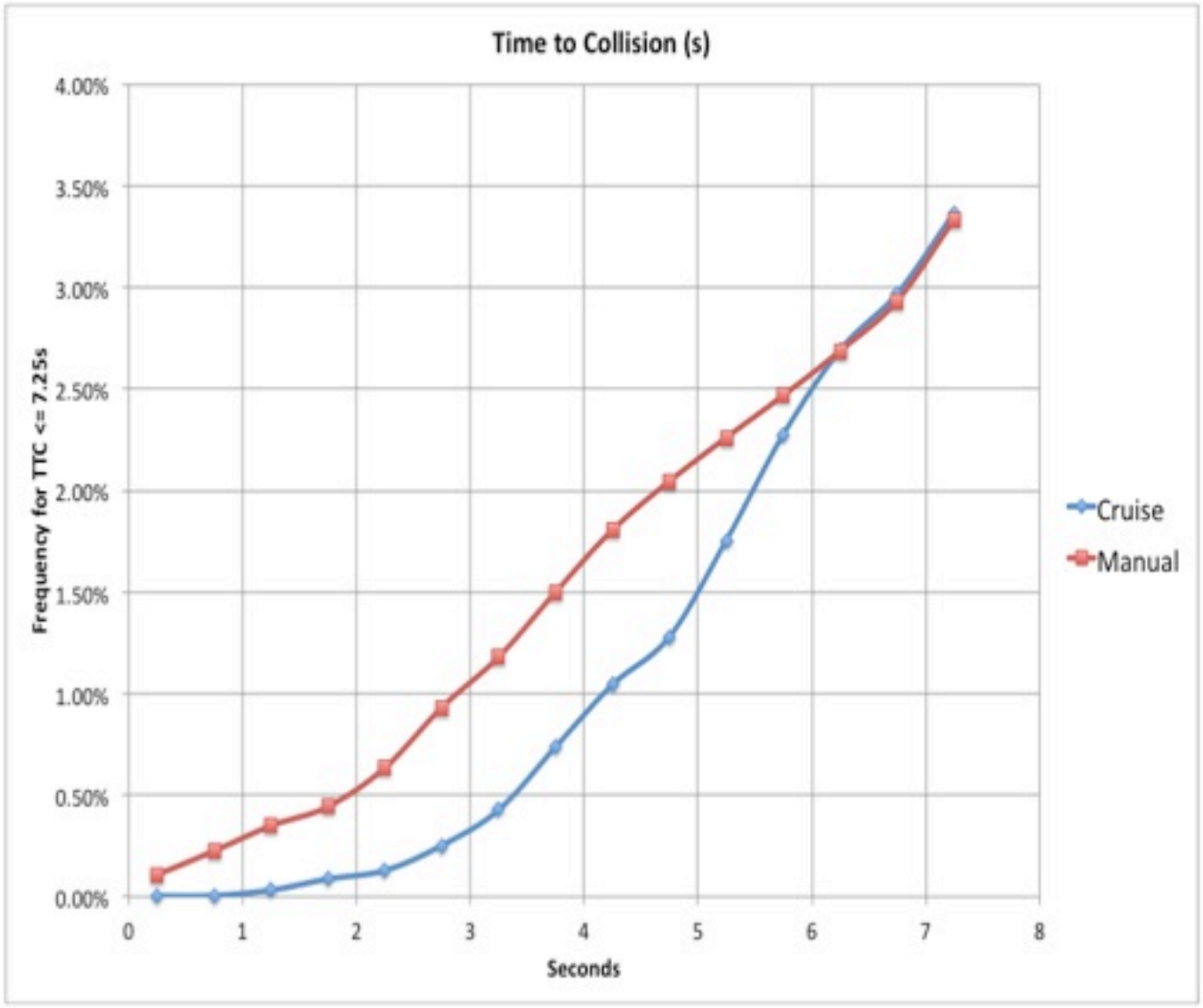


Time to Collision (cdf) (seconds)



Google

Time to Collision (<=7.5 seconds)



Google

Where are we at – Testing

Team

Google

Danger is the failure of our imagination

Our mission is:

Improve people's lives by transforming mobility