

# Better Driving via Machine Learning



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*Machine Learning in Transportation  
Workshop*

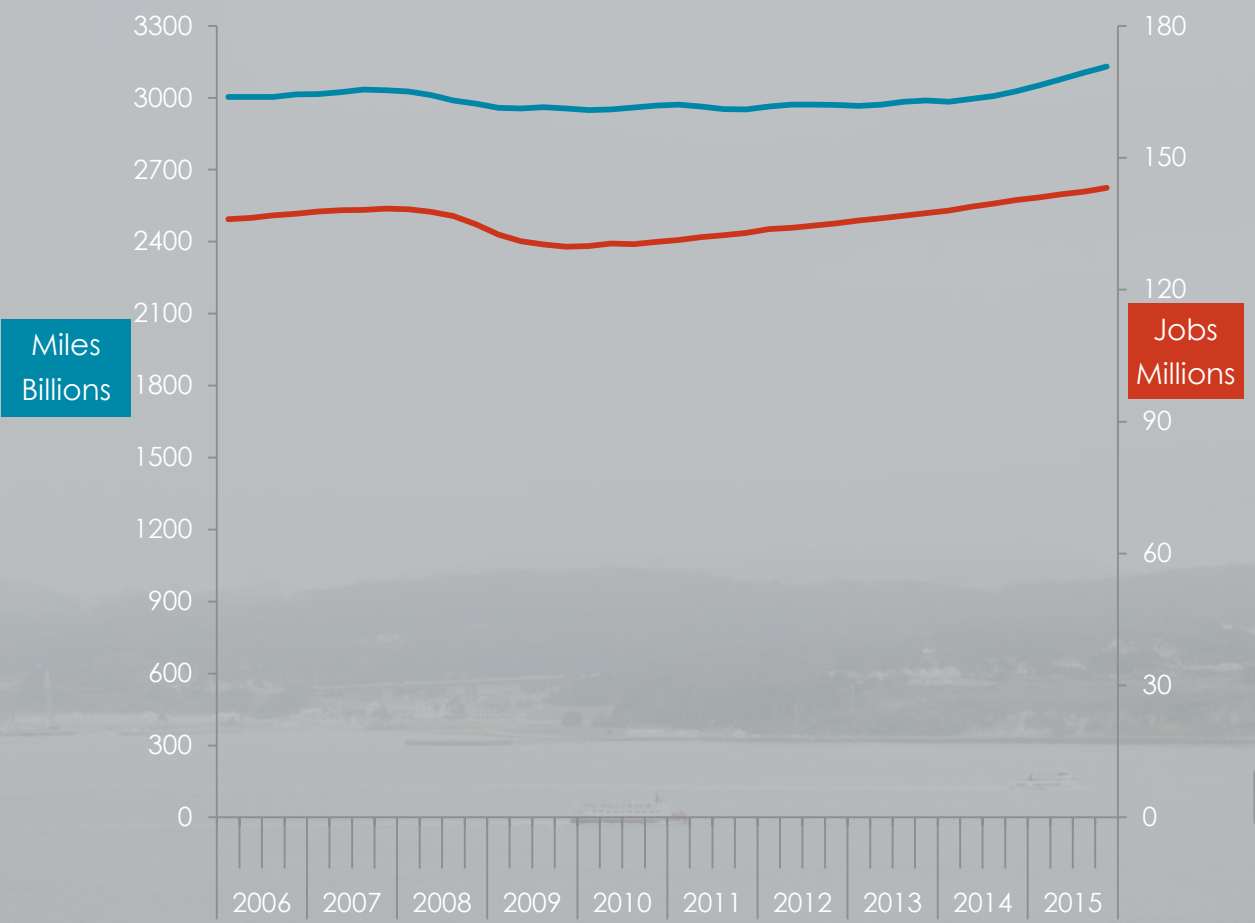
*October 26, 2016*



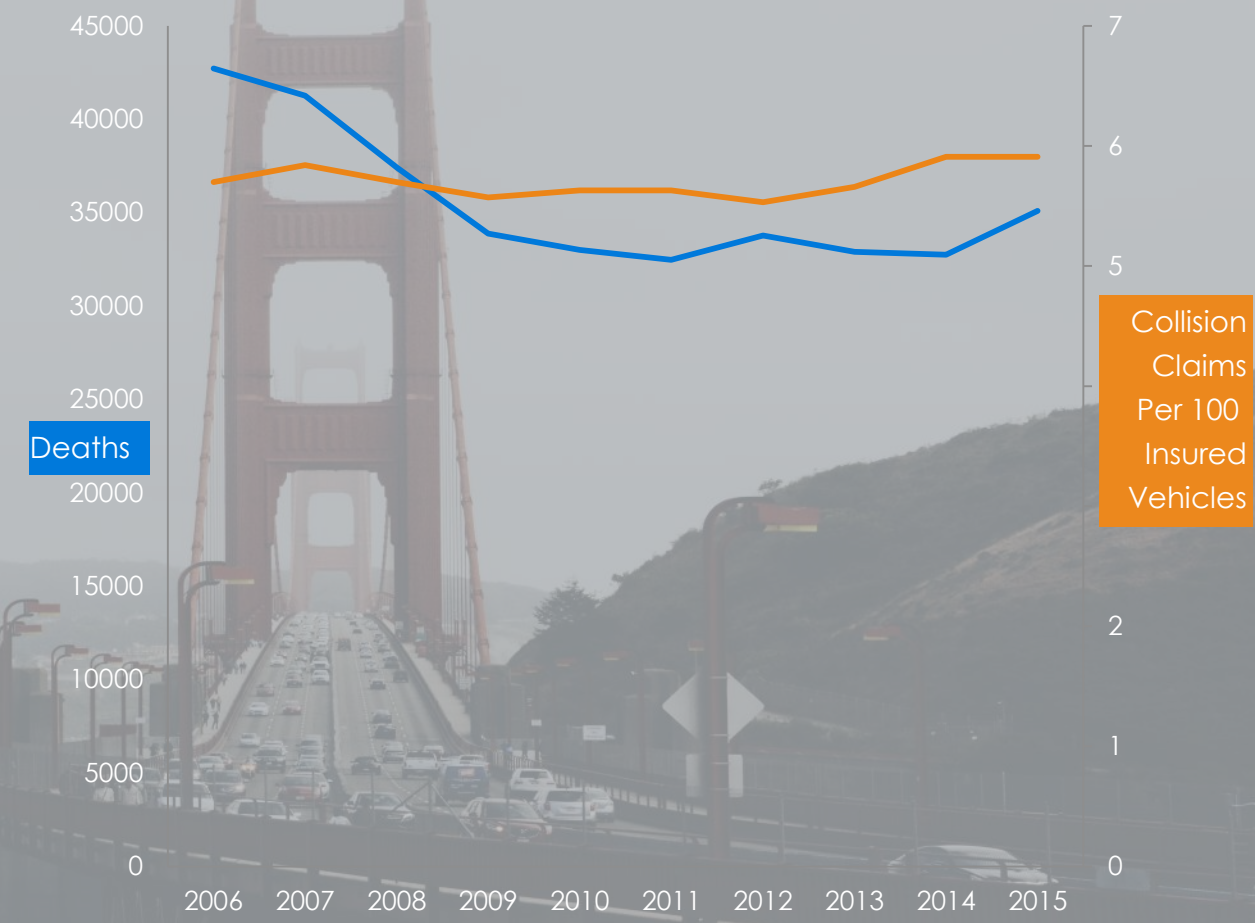
# Agenda

- A look at the Auto Insurance Industry
- Auto Insurance Industry in transition
- Machine Learning in Auto Insurance Industry
  - Machine Learning for Better Driving
  - Risk Reduction via Machine Learning
  - Faster Claims Processing
- Look ahead

# Recovering Economy, More Driving, More Collisions, More Fatalities



Source: Labor Data (BLS), NHTSA



# Auto Insurance Industry costs are going up



Bodily Injury

**+9.6%**



Property  
Damage

**+14.7%**



Personal  
Injury  
Protection

**+18.4%**



Collision

**+11.1%**

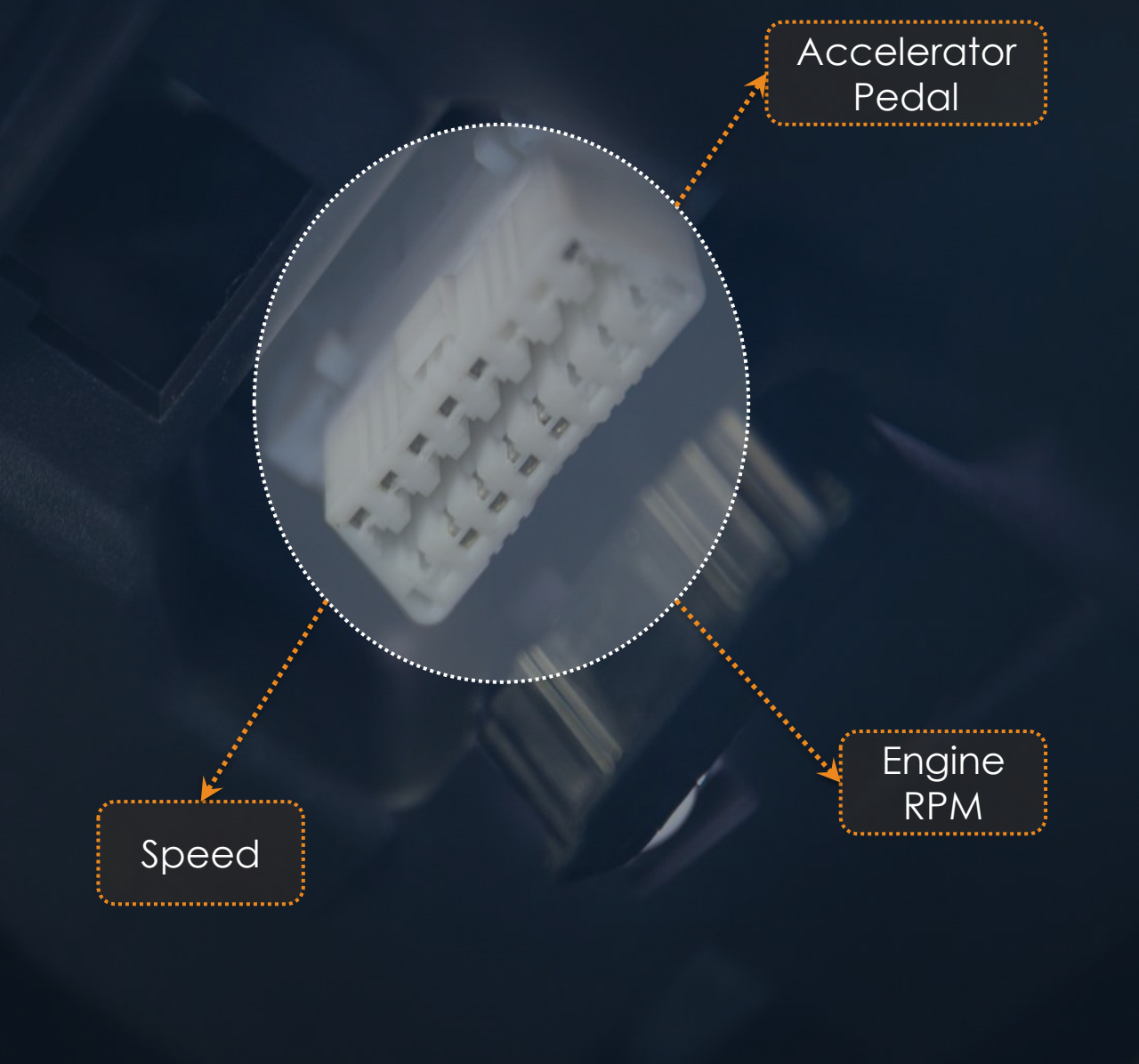
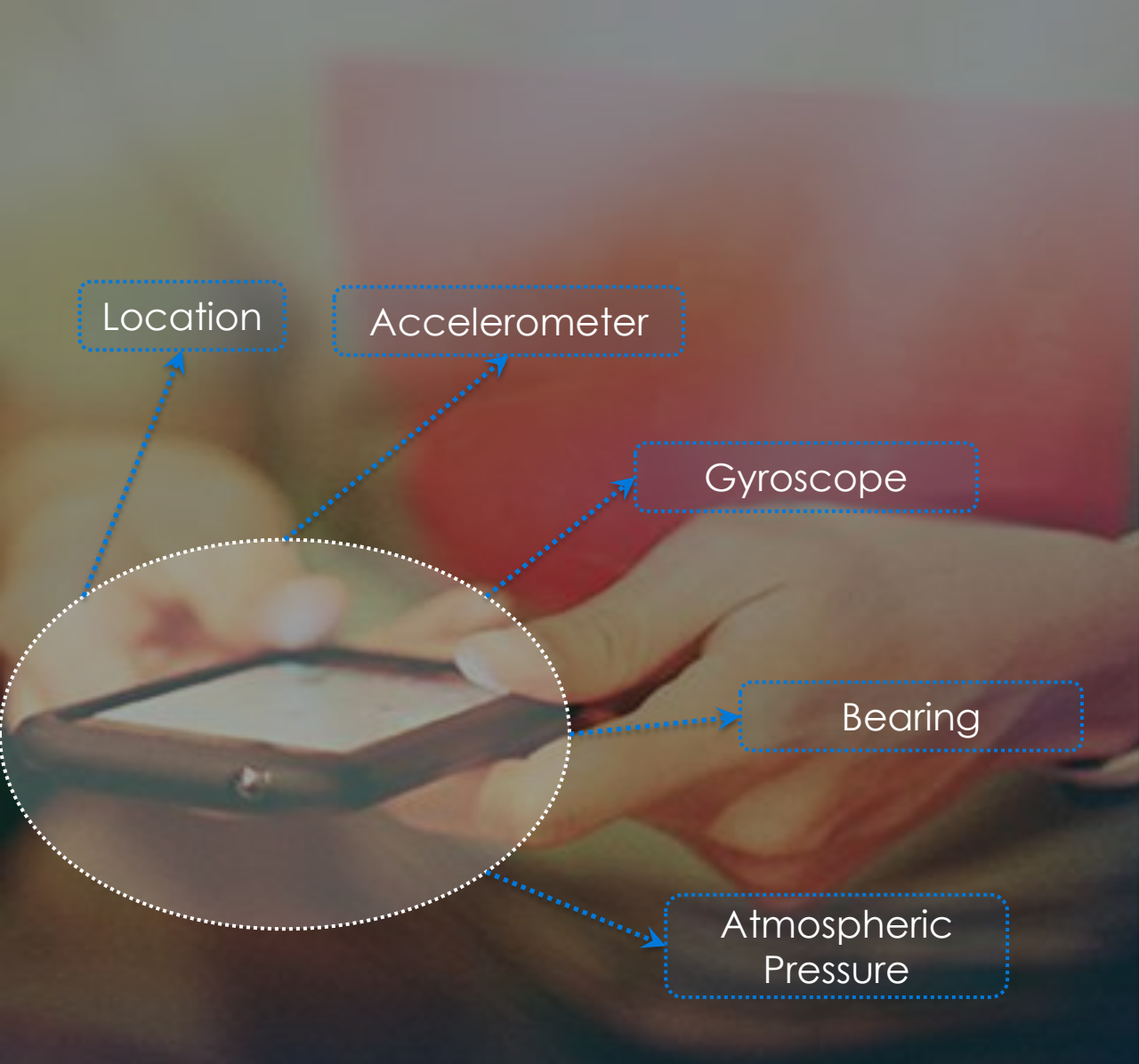


Comprehensive

**+11.0%**

Rise in losses from 2014 to 2016

# Real-Time Data enabling smarter driving



# Machine Intelligence — your in car driving coach

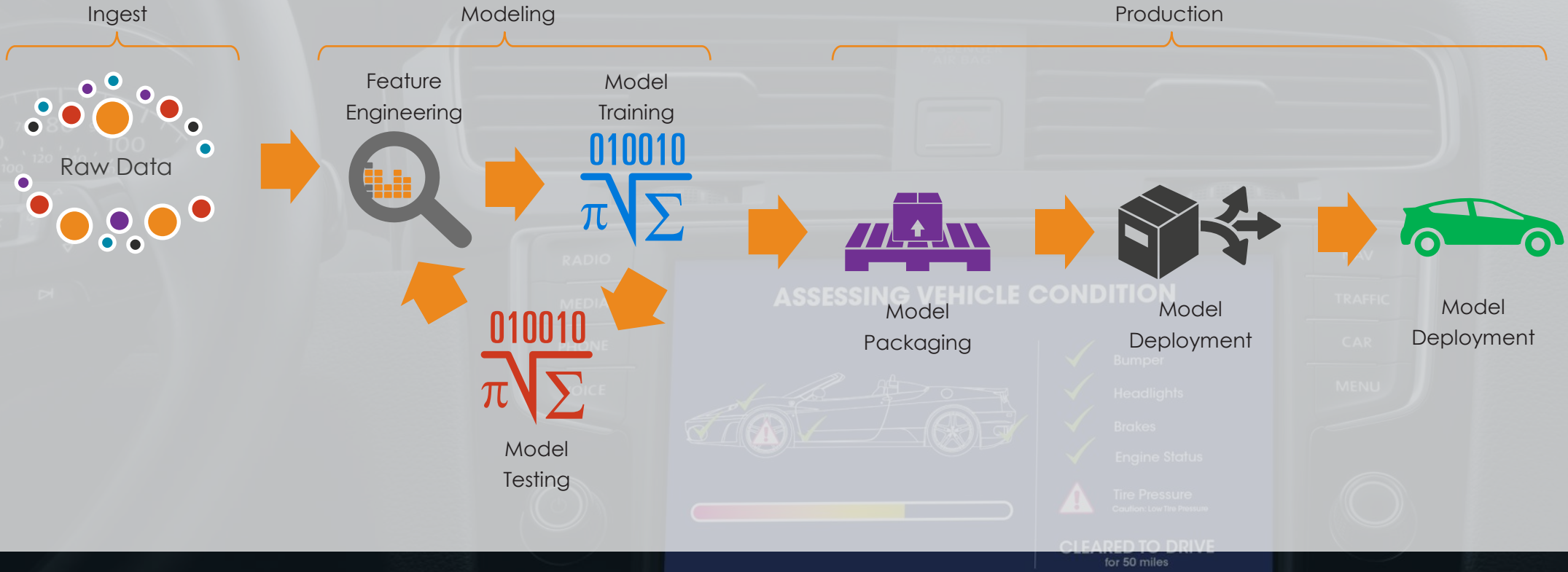
“Please slow down”

“You are approaching a dangerous intersection”

“Please be careful switching lanes”



# Deploying Real-Time Machine Prediction



# Providing value added Services to customers

## Daily Driving Summary

- ✓ Trips & Miles
- ✓ Smart Driving Points
- ✓ Speeding Incidents
- ✓ Erratic Driving Incidents
- ✓ Aggressive Driving Incidents
- ✓ Hazards Avoided

## Recommendations

- Slow down on Main Street on your way to Work
- Avoid Michigan Ave. in the evening
- Stay in lane during rush hour traffic on Rush Street



# Pay how you drive (PHYD) via Predictive Billing

Search 1:49 PM 100%

Home

Week of Oct 16, 2016

Line graph showing cost per day for the week of Oct 16, 2016. The y-axis represents cost in dollars, ranging from 0 to 35. The x-axis shows days of the week (S, M, T, W, Th, F, S). The graph compares 'Average Driver' (grey line) and 'Smart Driver' (blue line). The 'Smart Driver' cost is consistently lower than the 'Average Driver' cost.

Day	Average Driver	Smart Driver
S	32	32
M	28	28
T	25	25
W	28	28
Th	15	15
F	10	10
S	18	18

Navigation: Previous Week, Average Driver, Smart Driver

Time Period: Day, Week (7), Year (365)

<b>Insurance Cost To Date</b> 10/12/16 <b>\$1.87</b>	<b>Projected Monthly Cost</b> 10/22/16-11/23/16 <b>\$65-\$80</b>
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VIEW BILL PAY NOW



# Real-Time data and Machine intelligence in Claims resolution



# What is next for Machine Learning in Auto Insurance?

- More data:
  - Dash Cam Video Analytics
  - Wearables
- Better Algorithms:
  - Deep Learning
  - Artificial Intelligence
- In Car Applications:
  - Geo Fencing
  - Personal Assistant
  - Prescriptive Repair



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