MICHIGAN TECH
RESEARCH FORUM
MOBILITY TECHTALKS

Autonomy at the End of the Earth

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Autonomous Vehicles that are 1% safer than humans would:

- Reduce gasoline consumption by **20 million** gallons
- Save **$10 billion** in property damage and lost productivity
- Prevent **50,000** accidents
- **20,000** injuries
- Save **360 lives**
- **EVERY YEAR**

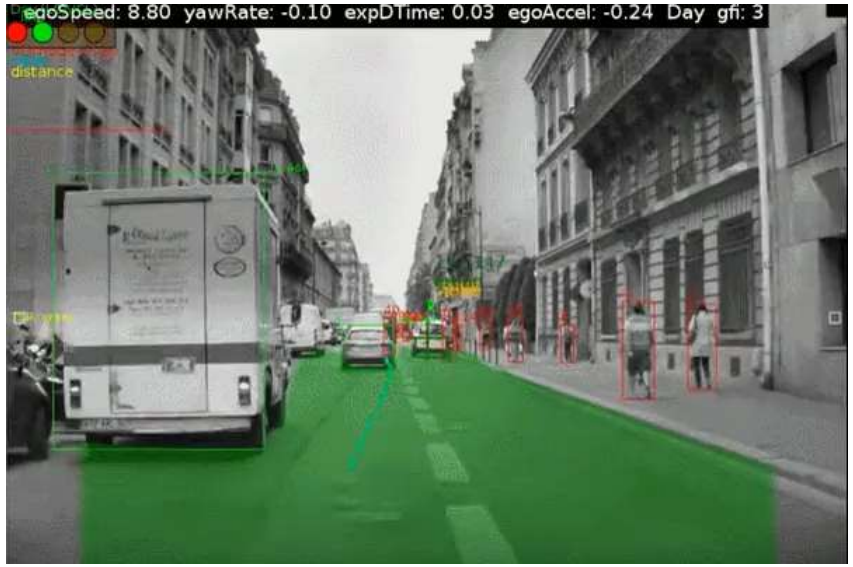
How do we define safe?

- **1** accident every **200,000** miles
- **1** incident **in** every **1 billion** hours of operation
- **45 billion** incident-free miles

3.148 trillion
miles in 2015 (US.DOT)

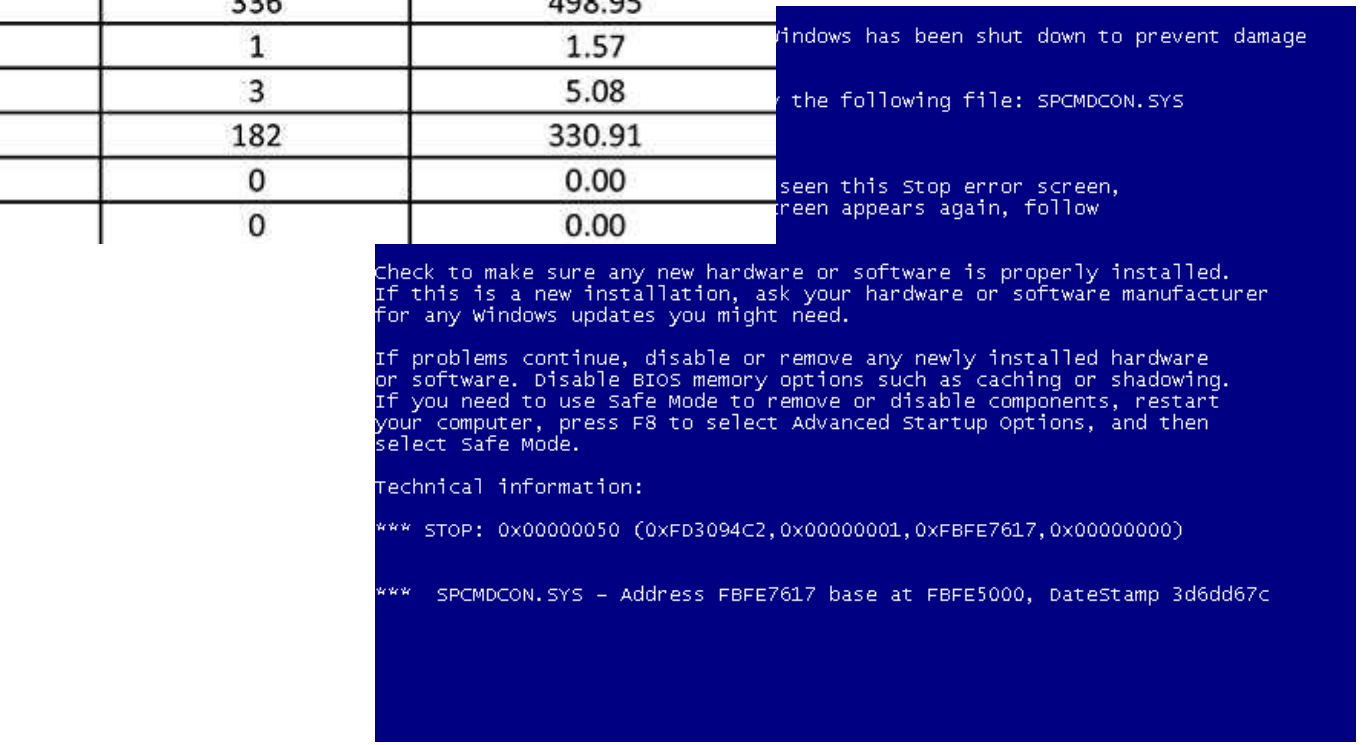
1.45%
of miles traveled annualy

….but not all miles are created equal



…and we're no where near close to fully autonomous

Company	Autonomous miles	Disengagements	Rate per 1000 miles
Google	635868	124	0.20
Cruise	10015	284	28.36
Nissan	4099	28	6.83
Delphi	3125	178	56.95
Bosch	983	1442	1466.94
Mercedes	673	336	498.95
BMW	638	1	1.57
Ford	590	3	5.08
Tesla	550	182	330.91
Honda	0	0	0.00
VW	0	0	0.00



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Autonomy at the **End of the Earth**

- V2X Data Sharing
- Vehicle Dynamics
- Functional Safety
- Sensor Fusion
- Surface Estimation
- Path Planning

Robotics Systems Enterprise

SAE AutoDrive Challenge

KRC Winter Testing