I'm very happy to be here today to mark the start of our partnership with Toyota, and the beginning of the end for traffic accidents.

At CSAIL, we believe computing holds enormous potential to improve the quality of every part of our lives.

This is why we're so excited to work with Toyota, because few challenges affect as many lives as improving the safety and quality of the driving experience.

In a single year, Americans drive nearly 3 trillion miles.[1] If you average that out at 60mph—pretty generous to anyone who sat in Boston traffic yesterday morning like I did—that adds up to almost 50 billion hours spent in the car.[2] That number grows exponentially when consider the rest of the globe.

That's a pretty big part of our daily lives we spend in cars.

Imagine if cars could learn…learn how we drive…learn how to never be responsible for a collision…learn what we need when we drive?

What if they could become trusted partners? Partners that could help us navigate tricky roads, watch our backs when we're tired, even make our time in the car…fun?

This isn't some imaginary future; this is the future we are building together with Toyota and Stanford. Today we take the first step towards creating it.

At CSAIL, our goals and capabilities are very much aligned with what Toyota envisions. We believe computing can make cars better.

Our mission at CSAIL is to invent the future of computing and make the world a better place through computing.

For the last 50 years, our researchers have dreamt up the biggest challenges in computing, and then found ways to make them happen.

If you've ever connected your laptop using an Ethernet port, logged into your email, shopped online, or gotten a good movie recommendation from Netflix, you have benefited from the work of our researchers on the invention of Ethernet, public key cryptography, and the World Wide Web. These are just a few of the many achievements that grew out of the passion that our researchers. Now we're excited to focus that passion on transportation.

Today, a car crash occurs every 5 seconds in the United States.[3] Globally, road traffic injuries are the eighth leading cause of death, with about 1.24 million lives lost every year.[4]

In addition to this terrible human cost, these crashes take an enormous economic toll. The National Highway Traffic Safety Administration has calculated the economic cost in the United States at about $277B a year.[5]

Putting a dent in these numbers is an enormous challenge—but it's one that we're ready to tackle.

---

[1] http://www.fhwa.dot.gov/policyinformation/travel_monitoring/14augtvt/page2.cfm

[2] Exact figure is 49.6 billion. http://www.forbes.com/sites/modeledbehavior/2014/11/08/the-massive-economic-benefits-of-self-driving-cars/

[3] https://www.osha.gov/Publications/motor_vehicle_guide.pdf

[4] http://apps.who.int/iris/bitstream/10665/83789/1/WHO_NMH_VIP_13.01_eng.pdf?ua=1

[5] From autonomous driving ppt

Our priority is firmly "safety first"— building a car that is never responsible for a collision, but we will also enable driver assist technology that will take the driving experience to the next level. Our research will be aimed at improving mobility and transportation by advancing the science of autonomy. Our researchers will work on developing (1) new tools for collecting and analyzing navigation data with the objective to learn from humans, (2) perception and decision making systems for safe navigation, (3) systems that can handle difficult driving situations: congestion, high speed driving, and inclement weather; (4) predictive models that can anticipate the behavior of humans an vehicles, and (5) more intelligent user interfaces.

Cars won't just be able to sense the state of the road; they'll be able to recognize the state of the driver.

Imagine if your car could tell you were having a bad day, and turned on your favorite album to improve your mood.

Imagine if your car could talk to your refrigerator, figure out that you're out of milk, and suggest where to stop on your way home.

Imagine if your car knew that you forgot to call your parents yesterday and issued a gentle reminder on the way home. And make that call was easy because you could turn the driving over to the car on a boring stretch of highway.

These are just a few of the possibilities when we bring together cars and computer science.

Thanks to the innovative vision of Okajima-san and Ise-san, with the leadership of Gil Pratt, and working in collaboration with Fei Fei Li and her Stanford team, we are ready to roll our sleeves and get working. Next time you hear from us we will bring you news about safe driving. I can't wait.