**Topics**

* This is just a starting point for research and organization of our presentation. I was probably putting too much importance in the cohesiveness of our topics – feel free to change it up! Reflect updates as an outline on this doc so we all have an idea of the overall presentation.

**Allen** – History of technologies leading up to self-driving cars

1885 Karl Benz invented the automobile. Later that year, he took it out for the first public test drive and crashed into a wall.

For the last 130 years, we’ve made the car stronger, we’ve added seat belts, airbags, and in the last decade, we’ve actually started trying to make the car smarter in order to work around that a bug and least reliable part of the car, the driver.

For some time people have dreamed of a car that drives itself safely on the highway and city streets. While driving can often be a fun experience, Americans spend about 50 billion hours per year behind the wheel and much of that is not productive or very pleasant.

In the past, this idea has generally been considered to be science fiction. Now we are able to overcome scientific, engineering and social obstacles to making it a reality. Now many experts believe this technology is within our grasp, if we have the will to build it and embrace it.

- Talk history such as the 2005 and 2007 DARPA Grand Challenge which jumpstarted the automated car field

- Talk about companies such as Google's driverless car project

- Brief Overview of how self driving cars work

- The problems with today’s car driven by humans:

- The upsides of automated cars (brief list)

- Maybe briefly list the upcoming topics that you guys will talk about to transition

**Drew** – ~~AI and its Technical and Ethical Impacts~~

~~Current State of Self-driving cars~~

~~Forecast for self driving cars~~

~~Compare and Contrast human v. AI driving abilities~~

~~Show data supporting these claims~~

~~Technical challenges of AI~~

~~Ethical Challenges of AI~~

~~Trolley problem~~

Implications on society and infrastructure

Impact on the status quo

**Chi** – Digital divide

As self driving card becomes more and more prevalent in our society, ethical issues that associated with it also becomes a real issue. One major ethical issue is that self driving cars are programmed to kill. Imagine you're in your self driving card down the road in one afternoon and through a series of unfortunate events, you are now driving toward a group of pedestrians with few options. The car could crash into the pedestrians, which will save you as the result, or it could crash into a wall which will kill you but save everyone else. So which is the correct answer? Of course there are no absolute correct answer. Well when in doubt, we look to the social contact for the answer, what would everyone do. Amazon Mechanical Turk did a similar study and ask for the public opinion. As predictable as it would seem, most people would favor the action that would save most life. But when asked when they're the one in the car, of course they picked to save their lives. So even public opinions are not reliable in this case. Before self driving car can be thing, something must be done about the ethical laws behind it or it'll create a policy vacuum.

Ethical issues of self driving car also connects to the issue of Digital Divide. As there are still many people in the world that does not have access to technology, many don't have a say in these ethical issues. What if those pedestrians are the ones who did not have a say on how the car programmed? Their lives are being decided without having them having a say in it. The Digital Divide can also be extended to those who will have self driving car and those who will be driving traditional. During the transition, there will be a separation of traditional car and self driving car. And when accidents occur during this time, who are the blame, the self driving car or the traditional car? And again, we cannot reply of the public opinions purely because the public themselves are divided.

As you can see, the main problem of transitioning to self driving car toward the future isn't so much about the car itself but the new ethical standard that comes with wit. Unlike other technological ethics, this issue is considered to be a new form of ethics because we are now dealing with the issue of machines making life and death choices on us. Should they be allowed to? If so, how are we going to program them to do it?

**Lyndon** – Networking and issues with centralized control

Self-driving cars have the potential to solve congestion and pollution problems. Controlled intersections would be a thing of the past, since a computer could manage cross traffic so well that intersecting traffic could pass between the spaces of of cars in the same lane (visual aid here). On the freeways, a computer could effectively manage a smaller distance between cars at higher speeds, increasing freeway capacity and eliminating traffic jams, drastically shortening drive times and the ecological impact of traffic. One necessary ingredient for this to work is a network that allows all cars to communicate. Who would be responisible for maintaining such a system? The automobile manufacturers themselves wouldn’t be able to, since a singular entity is needed to guarantee accounting of all vehicles on the road. Allowing one company to manage this is essentially handing them a monopoly. Moreover, control over all moving traffic is a major homeland security concern. An exposed vulnerability in such a system could result in the most damaging attack imaginable – a complete shutdown of all roadways and risk of immediate death by collision for millions of daily commuters. With such a security concern, the governament would have to take charge of this self-driving network. This creates a major privacy versus security concern. GPS vehicle tracking currently isn’t legal in the US (provide link to ruling here). That hasn’t stopped law enforcement from tracking the general movement of automobiles using dragnet license plate scanning (visual aid for how this works here). GPS tracking is a prerequisite component to a self-driving car network, and we would essentially be handing detailed information about our real-time location and habits to the federal government. This is a lot of power to willingly hand over, and it’s important to consider whether it’s worth the trade-off. Would you rather sit in traffic and have more freedom, or never worry about traffic again and be immediately cited every time you sped (link to survey here)? While I’m speed racer on the road, I realize that traffic is an exponentially incresing problem, and I’d be willing to change my ways for a solution.

**Alaysia** – Fault (responsibility, liability, accountability) and how this will effect insurance, licensing, etc.

1. What Self Driving Cars means for the future of Bureaucracy (Business, Insurance, and Licensing)
2. Insurance
3. Although, I personally cannot predict the future, I’m very certain insurance policies will HAVE to change along with the new technology
4. According to an essay published in the Yale Journal of Law & Technology, the need for insurance will decrease because as we move into self-driving cars the liability shifts from driver to manufacturer of the vehicle, the software developer, and any third parties related.

a. “If nondiscretionary-communicative vehicles became mandatory (as the introduction of either the interactive or remote-controlled models might require), there would be no need for private insurance, since all liability for AVs would be transferred to manufacturers,” writes Boeglin. He adds, “Eliminating the entire automobile insurance industry (which has roughly $200 billion dollars in annual revenue) would be a monumental boost to administrative efficiency.”

1. In fact, most predict the introduction of these vehicles will drastically change all aspects of transportation, considering Google’s goal is to change vehicle utilization from 10 – 75% with fewer cars on the road.
2. Furthermore, with technology made to prevent car accidents and decrease the amount of cars on the road…the future for insurance seems…unfortunate.
3. Licensing
4. The best part of turning 16, besides later curfews and getting halfway through high school is getting your license.
5. The US National Highway Traffic Safety Administration (NHTSA) has said that Google’s self-driving cars will now be considered legal drivers in the eyes of the law
6. At this point self-driving cars will need to have a licensed driver in the car, to manually drive the car in the event of an emergency, until self-driving cars are proven safe.
7. Business
8. Trying to imagine a future where Uber, Lyft, Sidecar, Yellowcab evolve into self-driving taxi services, leaving many people unemployed
9. Where food couriers, including the pizza deliverer, and potentially big rigs are just cars driving to you. Which seems like another form of detachment, non-personal.
10. Still trying to come up with some positive business things, maybe something to do with emergencies

Web: I was thinking about using audio to make a point, like a dashboard in a self-driving car…playing the radio and the conversation being about the following. I work in radio so I can write up a script and have a recorded conversation ‘on-air’ talking about new laws, licensing, and business.