

Artificial Intelligence and Legal Liability

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Who is liable and why?

A recent issue of *IEEE Spectrum* posed the following question:

 "It is the year 2023, and for the first time, a self-driving car navigating city streets strikes and kills a pedestrian. A lawsuit is sure to follow. But exactly which laws will apply? No-one knows."

Who is liable and why?

Possible liable parties:

- Anyone in the driving seat of the car who could have taken control
- The manufacturer of the car
- The manufacturer of the self-driving sensors
- The designer of the 'artificially intelligent' self-driving software
- The programmer of the self-driving software

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Added concern: Stifling Innovation



LAWS THAT PREVENT INNOVATION ARE UNDESIRABLE



BOTH PATENT LAW AND COPYRIGHT LAW ARE DESIGNED TO ENCOURAGE KNOWLEDGE SHARING

Another concern: Relative Risk





If there are two risks, one may be significantly greater than the other

Shouldn't such decisions be made by the driver?

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Three Legal Models

Perpetrator-via-another

Natural-probable-consequence

Direct liability:

- Strict liability e.g. speeding no intention required
- Negligence e.g. not slowing down when there's snow and ice on the road not doing what a 'reasonable person' would have done
- Intentional knowledge or information of consequences required e.g. deliberately causing damage/injury with a car

Who is liable under each model?



Perpetrator-via-another

Al is an innocent agent. Liability falls on the designer/programmer of the Al or the sensors



Natural-probable-consequence

Part of the AI intended for good is activated/not activated inappropriately

Liability falls on either the designer/programmer (if activation should not have happened); or the activator (user?); or the health and safety system that should have prevented inappropriate activation

Japanese robot example



Direct liability:

Strict liability – AI is liable

Negligence – did the programmer/designer take enough account of what a 'reasonable person' would do according to context?

Intentional - Designer/programmer liable

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Possible defences for an AI system



Computer virus

Similar to intoxication or coercion defences for humans?



Malfunction

Similar to insanity defence?



Criminal cases must be 'beyond reasonable doubt'

So defences are important Denial of service by teenager

Product or a service?



There's also the question of whether an AI system is legally a product or a service

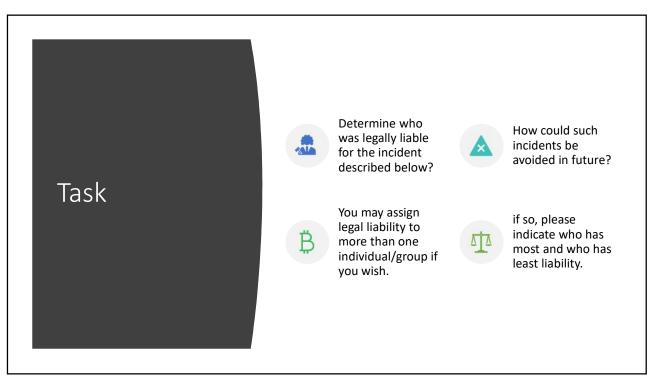


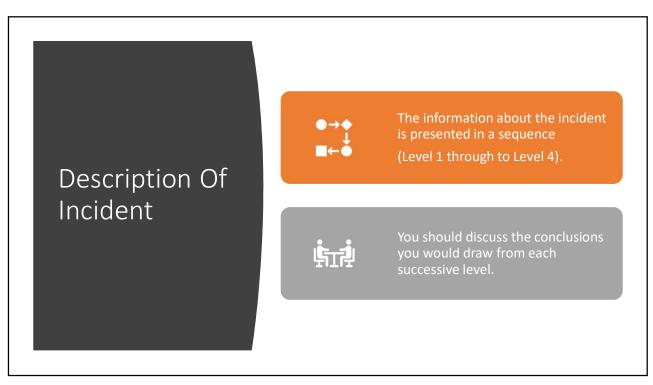
Makes a big difference in (US) lawsuits

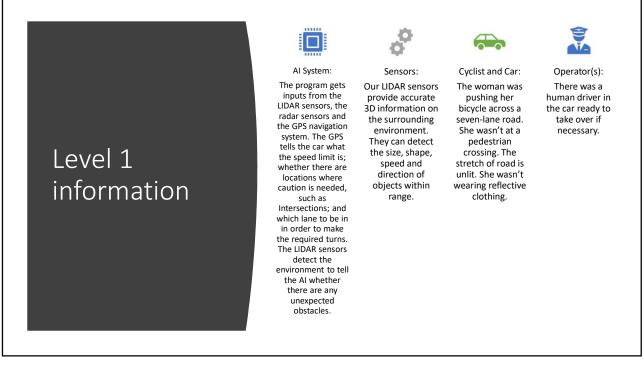
– product design damages are usually
much larger











Level 2 information



AI System:

The LIDAR sensors detect objects in motion as well as static objects. The Al calculates the speed and direction to determine possible collisions



Sensors

They work by sending out pulses of laser light, so they're not affected by darkness and not very much by fog, rain or snow.



Cyclist and Car:

The car was travelling at 43mph, within the speed limit of 45 mph.



Post-crash in-car video shows the human driver looking down at the self-driving interface rather than at the road for 3s before the crash.

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Al System: The Al does not respond to every object detected by LIDAR. If it did the car would be forever slowing down for plastic bags, leaves, birds or other objects being blown across the road. The operator can set the bar for how often objects that don't resemble human beings should be ignored.



Cyclist and Car:

There were no other cars nearby



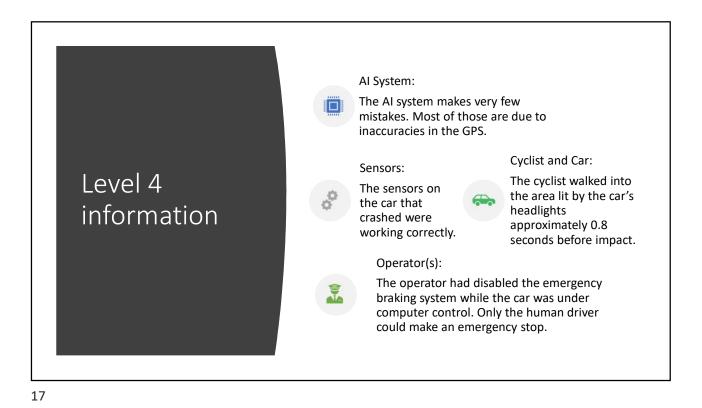
Sensors:

They aren't very good at very close range work (for parking) so the car also has radar sensors for that.



Operator(s):

Until a few weeks before the crash, there had been two operators in each car to double the chances of one being alert.



first recorded case of a pedestrian accident involving a self-driving (autonomous) car

collision occurred late in the evening of March 18, 2018

pushing a bicycle across a four-lane road in Tempe, Arizona

struck by an Uber test vehicle

struck by an Uber test vehicle

https://www.youtube.com/watch?v=X

TXd5bfX_GI

