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Monday, April 3, 2017

Announcing: *SmartDrivingCars Deployment/Commercialization/DeepDriving Summit*;
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Visit Landing Page for details. http://summit.smartdrivingcar.com/ Alain

Bloomberg Technology **Uber Crash Shows Human Traits in Self-Driving Software**

M. Bergen, Mar 29, "... Uber Crash Shows Human Traits in Self-Driving Software...In a statement to police, Patrick Murphy, an Uber employee in the car, said the Volvo SUV was traveling 38 miles per hour, a notch below the speed limit. He said the traffic signal turned yellow as the Uber vehicle entered the intersection. He then saw the Honda turning left, but "there was no time to react as there was a blind spot" created by traffic. The Honda hit Uber's car, pushing it into a traffic pole and causing it to turn on its side. ...Eyewitness accounts can often be unreliable, and other witnesses in the police report did not say that the Uber car was at fault -- something the police agreed with. Still, Torres's account raises the question of whether Uber's self-driving sensors spotted the light turning yellow and, if so, whether it decided it could safely continue through the intersection....Self-driving cars have more often been criticized for driving too cautiously, slowing or stopping when human drivers would be more aggressive. Autonomous vehicles operated by Waymo have been rear-ended due to such issues and the company has been working to make its system more human..." Read more *Hmmmm... Read the whole article. In a very concise way it hits the major issues, one of which is the very sensitive subject of offensive v defensive driving. How should we tune driving behaviors? As I pointed out last week, it would be very helpful if Uber released all of the data that was captured in the*

seconds leading up to this crash so that everyone can as Mark wrote: "...Last year, after a Waymo car bumped into a bus, the company said it used the incident, and "thousands of variations on it," to refine its software. "This is a classic example of the negotiation that's a normal part of driving -- we're all trying to predict each other's movements," it added...." *Alain*

Police Report Untangles Uber Crash Mystery

J. Yoshida, Mar 30, "...Uber isn't talking...." Read more *Hmmmm... Junko presents a more thorough discussion on this subject; however, to be helpful here, Uber should not only be talking, but should be releasing all of the data that it has so that some good can come out of all of this. Clearly they are not 'at fault', so there is a floor on the down-side. Only with the release of the data can society capture the most upside. Otherwise we are stuck with the he-said/she-said. Alain*

Requesting Female Driver Now an Option With Boston's 'Safr' App

A. Niezgoda, Mar 24, "When it comes to requesting a ride in Boston, there is no shortage of services out there, but a new Boston-based start-up aims to appeal to passengers who would feel more comfortable with a female driver...." Read more *Hmmmm... This is a REALLY good idea! Alain*

How Uber Uses Psychological Tricks to Push Its Drivers' Buttons

N. Scheiber, Apr 2, "...And yet even as Uber talks up its determination to treat drivers more humanely, it is engaged in an extraordinary behind-the-scenes experiment in behavioral science to manipulate them in the service of its corporate growth — an effort whose dimensions became evident in interviews with several dozen current and former Uber officials, drivers and social scientists, as well as a review of behavioral research.

Uber's innovations reflect the changing ways companies are managing workers amid the rise of the freelance-based "gig economy." Its drivers are officially independent business owners rather than traditional employees with set schedules. This allows Uber to minimize labor costs, but means it cannot compel drivers to show up at a specific place and time. And this lack of control can wreak havoc on a service whose goal is to seamlessly transport passengers whenever and wherever they want.

Uber helps solve this fundamental problem by using psychological inducements and other techniques unearthed by social science to influence when, where and how long drivers work. It's a quest for a perfectly efficient system: a balance between rider demand and driver supply at the lowest cost to passengers and the company..." Read more *Hmmmm... This is really interesting. Read it all. However, with Driverless cars, this headache goes away. Can you imagine how much Uber wants Driverless cars. (Although, Uber's fundamental IP may well be in*

its ability to efficiently and effectively manage part-time workers in the gig economy. That IP is worthless in a Driverless world. So, Uber may need to be careful what it wishes for.) Alain

FutureStructure **AI in Autonomous Cars of Significant Importance, Tech Company 'Nvidia' Says**

C. Said, Mar 28, "..."Whether a car, truck or shuttle, they're all trying to accomplish the same task: replace a human behind the wheel," said Danny Shapiro, Nvidia senior director of automotive. "There's no way to write code to account for everything the car could encounter; the world is too random. The only way to enable the car to handle the near-infinite number of things that can happen is artificial intelligence. For that you really need a supercomputer in the car."...

"Intel, Nvidia and Qualcomm are all trying to muscle their way into the lead in the (self-driving) industry," said Paul Cuatrecasas, CEO of Aquaa Partners..."Nvidia has the advantage of speed with its expertise in GPU-accelerated computing," he said. "But Intel has deep pockets, which it has recently demonstrated through its proposed acquisition of Mobileye. In rapidly changing markets with a lot of startup entrants, the firepower to buy up new emerging technology companies quickly may give them an edge."

Shapiro naturally had a different view. "There's definitely a difference between deep pockets and deep learning," he said.

Nvidia is not exactly impoverished. For the fiscal year ended Jan. 29, it had $6.91 billion in revenue, up 38 percent from the prior year, while profits were $1.66 billion, up 171 percent. Intel's fiscal 2016 revenues were $59.4 billion, up 7 percent, with profits of $10.3 billion, down 10 percent. Nvidia's robust growth helped make it the best-performing stock in the S&P 500 last year. Its shares skyrocketed 238 percent. The No. 2 performer, natural gas company Oneok, saw shares rise 135 percent."Read more *Hmmmm... Danny, **Best** on that metric is a very nice accomplishment! Alain*

THE AUTONOMOUS ISSUE

Vol 11, No. 4, April 2017, Read more *Hmmmm... Nice to have* **Thinking Highways** *focus an issue on Automated Vehicles.*

*David Pickeral has a nice Opinion piece on **Room for Improvement*** (p 4) "... As I have said again and again in numerous contexts across both conventional and social media: We as a species do not need self-driving car technology that eliminates drivers nearly as immediately as we need ADAS technology that eliminates accidents...."

*Mike McGurrin has a nice piece on **The magic behind self-driving car**s* (p 8) "... One of the strengths of machine learning techniques, including deep neural networks, is that they can generalize, applying the trained and tuned algorithm to handle cases that they have never seen before, just as humans do. This is invaluable in handling a task with the nearly infinite variations encountered in driving. In addition, they provide an estimate of their confidence in the result,

which could, for example, be used to trigger a need to return control to a human driver. A significant short-coming of neural networks in particular is that while they can be incredibly accurate, they do not provide information on how they reach a decision . ..."
Ben Grush and John Niles have a nice piece on ***Public fleets of automated vehicles and how to manage them***
(p 16) " (which I commented on in a previous issue of SDC)
Richard Bishop has a nice piece on ***2017: the year of the robo-taxi?*** (p 61) "...If you wait for your robo-taxi to be able to handle everything, you'll wait a long time. Instead, field a highly capable AV with the ability to always maintain safety.... my hunch is that 2017 will be the year when robo-taxi services will first be offered to the public. No engineers with hands hovering near the steering wheel, just an empty car picking up those daring enough to give it a shot. Will they be everywhere? No way. Robo-taxi deployments will start in small zones which the Transportation Network Companies have determined are ideal – possibly an entertainment district..."
Read more *Hmmmm... The above are good. The rest seems to be pushing the same old 'Connected' & 'V2V'. :-(Alain*

BUSINESS INSIDER **America's newest bikesharing program lets you drop off bikes basically anywhere**
C. Weller, Mar 25, "Earlier this month, Bay-Area-based startup Spin introduced the first large-scale deployment of a stationless bikesharing program in the US. As of March 11, Austin, Texas now has hundreds of orange Spin bikes randomly scattered around the downtown area, each available for rent whenever and wherever Austinites need them.

Each bike pairs with a mobile app that electronically unlocks the bike for $1 per 30-minute trip....
There also is an on-the-ground task force that Spin has hired to enforce some of the policies. If people steal the bikes or misuse them, Spin will assemble a team that can investigate the problem. Ko says reports about China's stationless bikesharing program going totally awry are mostly sensational; save for a few bad apples, he doesn't expect the heaps of discarded bikes China has seen in a few rare cases..." Read more *Hmmmm... I hate to sound pessimistic, but these better have active GPS systems on them so that their current location can be monitored, else these bikes will be scattered across Austin's outskirts in very short order. Allowing the user to 'leave the bike anywhere' is certainly an enormous value proposition to the user. Unfortunately, it is an enormous empty-vehicle-management headache to the operator. With aTaxis, this isn't a problem because they can re-position themselves. In fact if my stolen S550 had been 'Driverless', it could have re-positioned itself from New Orleans when the police arrested the thieves as they were about to load the car nto a container headed for South America. (Of course, if it was Driverless, I wouldn't have owned it, nor could the original thieves have been able to drive it way from my driveway.) Alain*

FORTUNE **Google's Waymo Is Testing Self-Driving Minivans in the Snow**

K. Korosec, Mar 27, "...Making snow angels in Tahoe! We're testing our self-driving Pacificas in cold weather & collecting snow data to train our software...
Waymo took the wraps off its autonomous minivans in December. The following month ahead of the North American International Auto Show kicked off in Detroit, Krafcik provided a deeper look into the company's business model, the technology inside the vehicle, and its timeline for testing on public roads...." Read more *Hmmmm... Nice! Alain*

Erie Insurance **National survey from Erie Insurance finds majority think self-driving cars will eliminate distracted driving**

Press release, mAR 27 " A recent national survey commissioned by Erie Insurance, and conducted online by Harris Poll among nearly 3,000 licensed U.S. drivers, finds almost six in 10 (59 percent) think that self-driving cars will eliminate the problem of distracted driving. Two-thirds of men think this, compared with just over half of women (66 percent to 52 percent, respectively).

But while it might be nice to completely kick back and let the car do the driving, experts say the time for that is likely a long way off...."The term 'self-driving car' suggests I can hop in my car, enter a destination and have it take me from point A to point B. ..."..." Read more *Hmmmm... That's why you should call them 'Driverless' and leave 'Self-driving' to be used only for those cars for which the car drives itself for only part of the trip. For that part of the trip, it allows you to be totally distracted, without suffering the consequences of being distracted. 'Safe-driving' cars, cars that have Automated Collision and Lane Departure Avoidance systems that actually work, also mitigate the negative implications of distracted driving. Alain*

TESLARATI **Tesla defends its right to release individual driver data to disprove claims**

C. Fortuna, Apr 3, "During a week in which the House of Representatives voted to repeal Obama era Internet privacy protections, Tesla has come under fire from owners who dispute the all-electric carmaker's right to disclose individual driver data to the media while also failing to share that data with the drivers themselves....
...What's being contested here then? Several things, actually. Tesla feels it has an explicit corporate need to stand behind its driving-assist Autopilot technology through public disclosures of individual driving data when a crash occurs. Individual Tesla drivers, on the other hand, express a desire to maintain the right to information privacy regarding their driving performance. And, while Tesla has disseminated individual driver information to the media following Tesla crashes involving its Autopilot system, it continues to deny data sharing with individual customers. Moreover, the company does not follow the commonly accepted research practice of gaining permissions from study participants prior to including them in a data set...."
Read more *Hmmmm... This is a real issue. It is very important that data leading up to and including crashes be made public. Since driving is supposedly a 'privileged' not a 'right', society's greater good may win. Also, the individual is not of interest, so all personal information can be redacted. This is a real issue. Alain*

IBM Patents Cognitive System to Manage Self-Driving Vehicles

Press release, Mar 30, "IBM (NYSE: IBM) today announced that its scientists have been granted a patent around a machine learning system that can dynamically shift control of an autonomous vehicle between a human driver and a vehicle control processor in the event of a potential emergency, providing a safety measure that can contribute to accident prevention...U.S. Patent #9,566,986: Controlling driving modes of self-driving vehicles for this invention."..." Read more *Hmmmm... What was the examiner thinking??? Isn't there prior art all over the place. Anti-lock brakes (apply the brakes properly) and Electronic Stability Control (don't lose your rear end) have been doing this for years. Is this part of IBM's 'give the lawyers something to do initiative'? I guess I don't understand IBM's ingenuity here. Alain*

Melbourne's hook turns confound state-of-the-art Benz technology

Mar 25, "...Autonomous motoring expert Jochen Haab (pictured) has already pinpointed one element of the local driving environment that's unique to Australia and problematical for autonomous car engineers – Melbourne's confronting hook turns..." Read more *Hmmmm... We have those in Jersey, They are called 'Jug Handles'. What's worse are 'Michigan Lefts'. In the end, these are much easier to deal with than being cut off. Alain*

The Autonomobile and the City

M. Sorkin, Apr 1, "The implications are profound, and not just for the employment prospects of the immigrants and "shared economy" operatives who drive the vehicles. Something radical looms, both for the fundamental nature of our mobility and for the form of the cities in which we circulate. Just as earlier technological innovations, like streetcar lines, railways, and horseless carriages, had transformative effects on urban morphology and life (exponential growth, suburbanization, corridorization, and other dramatic physical and social changes), so the advent of the autonomous vehicle—autonomobiles—will transform our cities decisively...

Such revolutionary technology can have fundamental impacts on the form of both current and coming cities. To keep it friendly, however, will demand fighting the growing dominance of the "smart city" mind-set and its uncritical accumulations of "big data" to improve efficiency and control, without much deep thinking about noncorporate forms of desire.
" Read more *Hmmmm... 'Autono-mobiles', that's a worse name than 'autonomousTaxis (aTaxis). Implications on urban form are so nebulous, that I offer up almost every article find. I like the 'smart city' comment, but there seems so little to chew on. The 1967 image is not it. I must have missed something. Alain*

NVIDIA scoops up Tesla Vice President of Autopilot David Nistér

Kyle, Apr 1, "NIVIDIA has hired former Tesla Vice President David Nistér who was a key player on the Autopilot team since April 2015. Nistér's departure from Tesla follows a string of staff changes taking place on the Autopilot division, most recently seeing the arrival of 11-year Apple veteran Chris Lattner who joined Tesla early this year as the company's newest VP of Autopilot. Lattner's arrival came amid shake ups within the department after Tesla sued a former Director

of Autopilot for allegedly stealing proprietary information from the Elon Musk-led electric car company...." Read more *Hmmmm... Wild, Wild, West. Alain*

Some other thoughts that deserve your attention

Jerks and the Start-Ups They Ruin

D. Lyons, Apr 1, "The tech industry has a problem with “bro culture.” People have been complaining about it for years. Yet nobody has done much to fix it. That may finally change, if the people in charge of Silicon Valley — venture capitalists, who control the money — start to realize that the real problem with tech bros is not just that they’re boorish jerks. It’s that they’re boorish jerks who don’t know how to run companies...

...This poisonous state of affairs will get fixed only when investors start getting hurt. A crash at Uber, the most high profile tech start-up in the world, could provide the jolt that finally brings the tech industry back to its senses." Read more *Hmmmm... Such behaviors, along with VW-type cheating, are simply **unacceptable**. Alain*

A Startup’s Plan To Cut Air Freight Costs In Half With 777-Size Drones

D. Terdiman, Mar 27, "The idea is simple: Shipping by air is fast, but expensive. Boat is much cheaper, but very slow. So why not send all those boxes and packages on an un-piloted, amphibious Boeing 777-sized drone that can fly point to point and eventually drop off as much as 200,000 pounds of cargo at a seaside port? It would carry that cargo at about half the cost of normal air freight thanks to a more efficient use of fuel and the lack of an expensive crew.These potential consequences are self-driving cars as social outcasts and anti-social behavior of owners. ..." Read more *Hmmmm... April Fools??? Alai*

On the More Technical Side

http://orfe.princeton.edu/~alaink/SmartDrivingCars/Papers/

Half-baked stuff that probably doesn't deserve your time

SMMT: Connected & autonomous vehicles will improve quality of life for six in 10 people with limited mobility, finds new study

News Release, Mar 30, "Connected and autonomous vehicles (CAVs) will transform the lives of six out of every 10 people in the UK, according to new research published today by the Society of Motor Manufacturers and Traders (SMMT)..." Read more *Hmmmm... I bet the same could be*

said about AVs without the C. C only offers entertainment to these folks (who already have the content on their smartPhones.) Alain

C'mon Man! (These folks didn't get/read the memo)

Calendar of Upcoming Events:

Deployment/Commercialization/DeepDriving Summit

May 17 & 18, 2017

Princeton University

Princeton, NJ

Save the Date