Automotive Innovation

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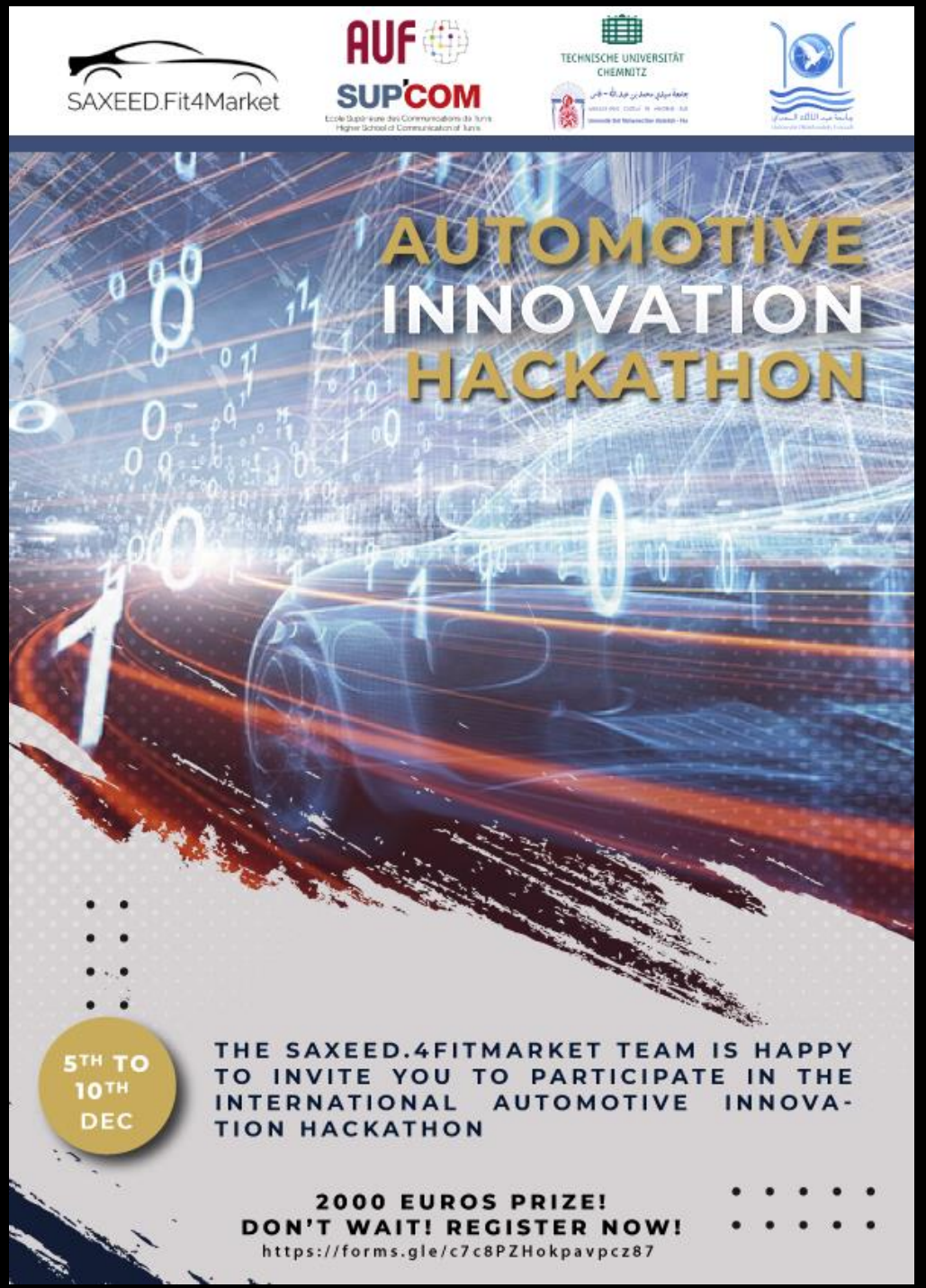
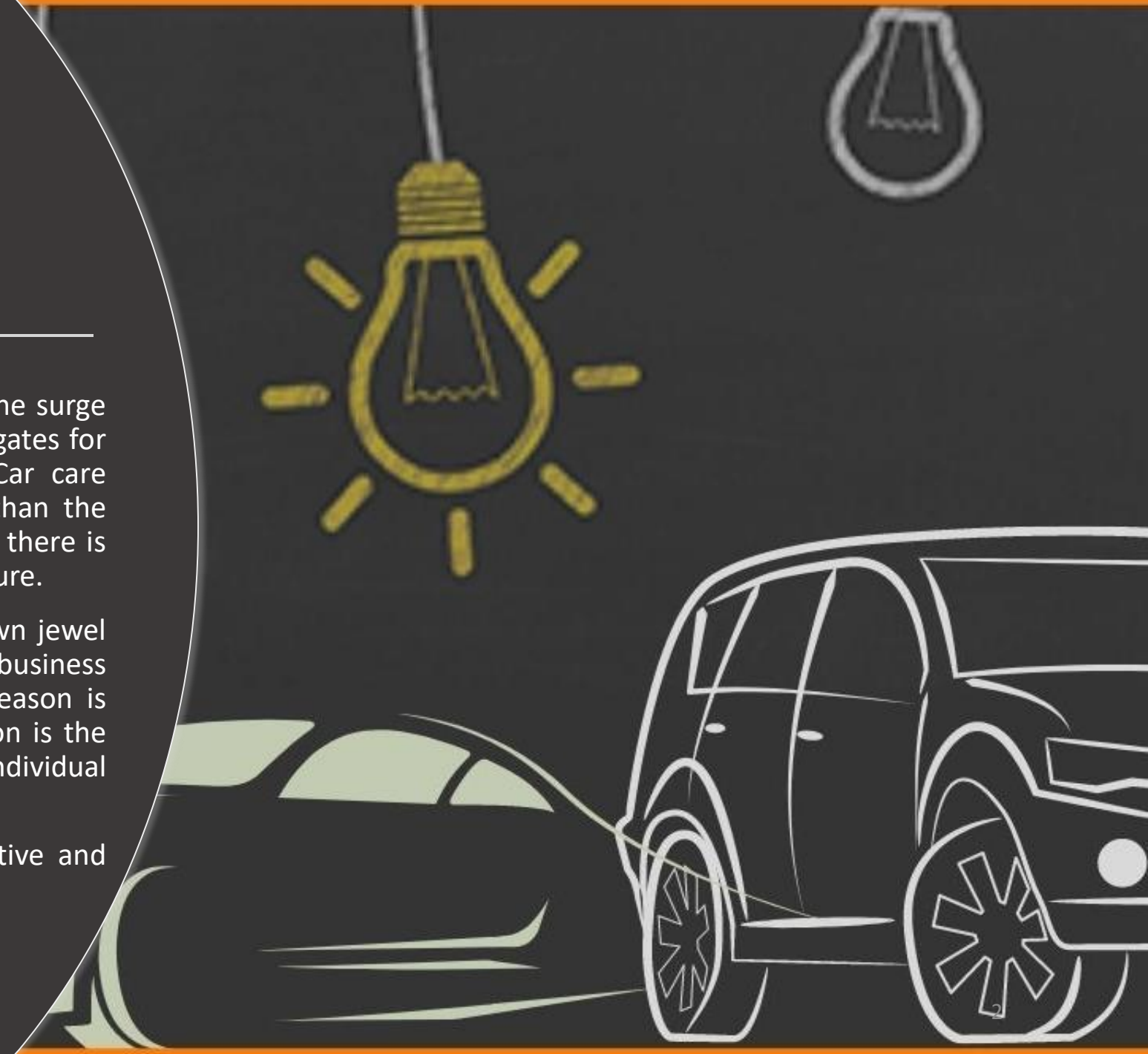
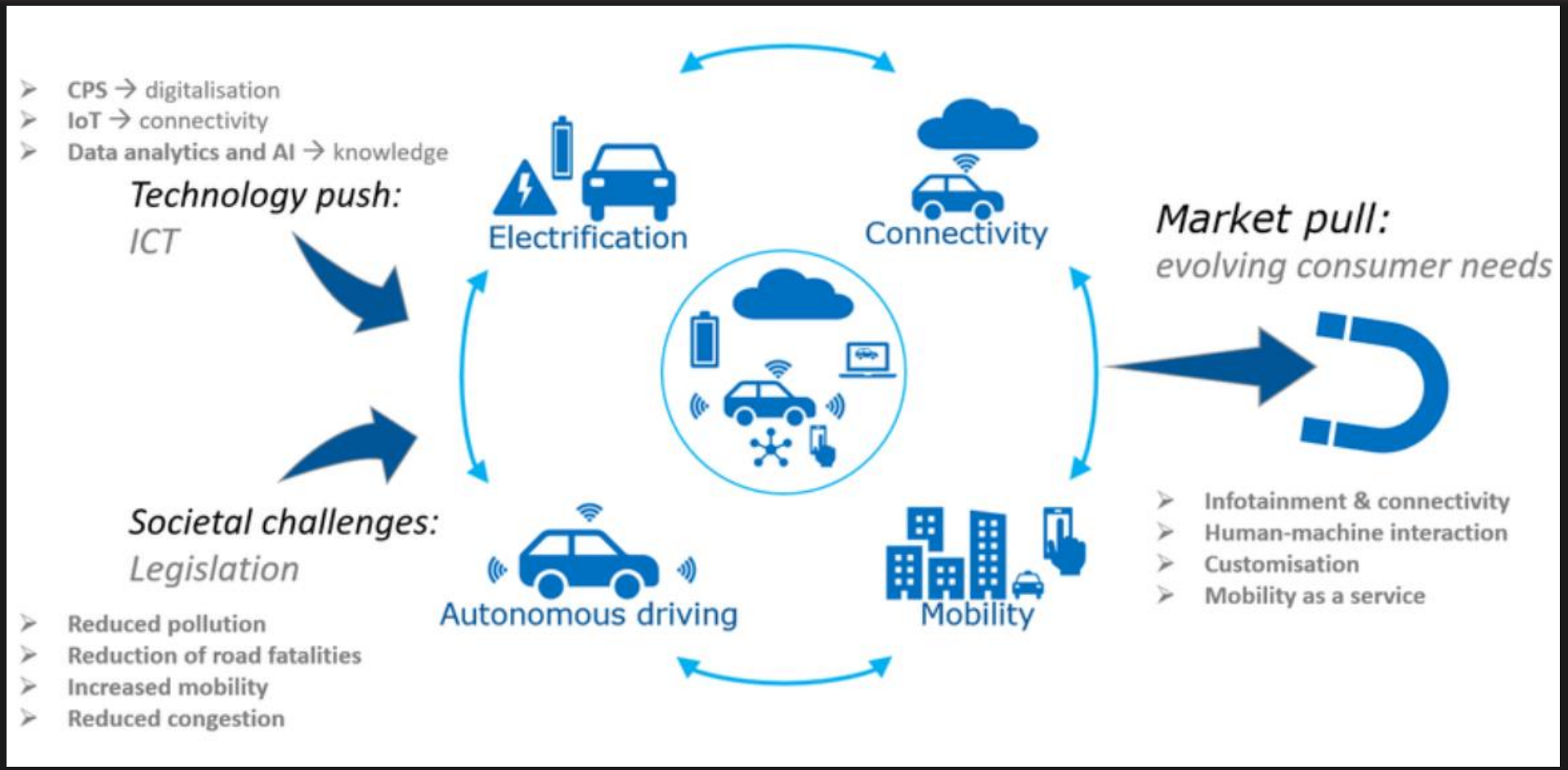


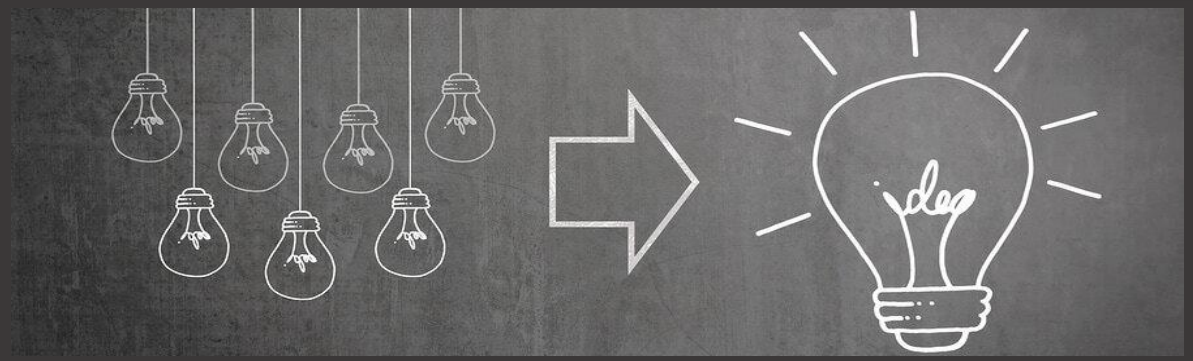
Automobile related Business Ideas

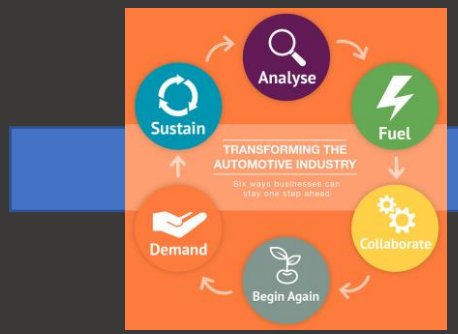
- The Automobile industry is on the upswing due to the surge of economy and technology. They have opened the gates for many startups and businesses ideas to flourish. Car care businesses will continue to grow at a faster rate than the overall economy. Forward-looking indicators suggest there is plenty of opportunity for additional growth in the future.
- The society of automobile manufacturers is the crown jewel of the transportation industry, jobs created and business opportunities they provide are innumerable. The reason is the increasing population of vehicles. Another reason is the increasing number of average miles driven by an individual vehicle owner.
- The automotive industry is a box for many innovative and creative entrepreneurs.



Automotive challenges







New technologies vs Automotive World

- With an era fully packed with the latest technological advances, the automotive sector has come a long way. As smartphones are here for doing more than just calls, automobiles can also do more than just transport. The industry is gradually moving towards a bright future wherein auto professionals can generate more revenue with innovative solutions.
- One of the surprising things about this sector is that it is still at the forefront of upcoming innovations in automobile industry. It would be best if you kept an eye on all worth noticing technologies to drive your business forward in this competitive industry.
- Long-established technologies play a significant role in the future of the upcoming innovation in automobile industry. At an accelerating rate, the sector is incorporating new technologies into its operations. Technologies like artificial intelligence, big data & analytics, the internet of things (IoT), and Blockchain have countless beneficial uses in the automotive industry.
- Several **automobile software development companies** combine their cutting-edge thinking with the latest environmentally friendly technologies to better the future of mobility.

Autonomous Vehicles

- In the automobile industry, AI-based autonomous vehicles are setting the pace as automotive new technology innovations. Self-driving cars are allowing AI to enable innovative transport methods. These vehicles do not require drivers and mainly rely only on sensors and software to operate. Autonomous vehicles, often known as self-driving vehicles, aim to reduce the need for human drivers and appear to be on the edge of revolutionizing ordinary transportation.
- Many cars already have semi-autonomous capabilities inside, including automatic braking sensors, highway lane sensors, mapping technology that monitors blind spots, rear-and-facing cameras, and self-parking capabilities. Automakers have been compelled to introduce self-driving cars due to technological advancements. However, we are still a long way from fully autonomous vehicles. Autonomous vehicles may help in the reduction of traffic accidents.

The Next-Gen Of Production is 3D Printing

- With the rising demand for new vehicles and upcoming innovation in automobile industry, manufacturers and end-users are constantly striving for better-performing vehicles. They are greatly optimizing production and streamlining supply chains and logistics.
- All of these objectives and upcoming innovation in automobile industry are being met, thanks to 3D printing technology. This upcoming innovation in automobile industry has been looked into in every aspect. It’s utilized for more than just quick prototyping; it’s also used to make tools and end parts.

Electrification Is A Need In Today's World

- The car industry is betting on batteries for the future. In a worldwide race to profit from emission-free electric vehicles, government agencies, investors, and carmakers are investing money into battery research. Electric automobiles use a better level of energy efficiency and lower fuel usage to overcome the issues.
- Even though electric vehicles have limits, their acceptance and implementation in the sector are still controversial. Electric car manufacturers should provide solutions for battery life, affordability, charging infrastructure, renewable energy charging, and fleet electrification.

Digitalization Is The Industry's New Face!

While digitalization is a new arena for the auto industry, prominent automobile institutions have already incorporated it to cater to their consumers and give them the most significant car buying and selling experience possible. However, soon, this upcoming innovation in automobile industry will also include the use of Virtual Reality, Internet of Things, and Augmented Reality and its operations at a deeper level.

Automotive

1.500+ emerging startups analyzed
2020: global automotive industry profits increase to 79€ billion

Internet of Vehicles

connecting vehicles to smartphones, public infrastructure and other vehicles

enabling remote diagnostic services
empowering V2X, V2V & V2I communications, vehicle monitoring and self-parking
production side: IIoT improves efficiency & productivity

watch out for: GLUON

Smart Sensors

collecting data (radar, engine, camera) in real-time, enabling vehicles to get precise & long-range view of its surroundings
regulating the operation of vehicles and paving the way for autonomous driving

new sensor-cleaning applications (deicing, dust or mud removal) required
soon capable to pre-process & filter data
paving the way for a coherent flash automotive LiDAR

watch out for: oryx

Autonomous Driving

striving for level 5 autonomy using LiDAR, radar, ultrasound, cameras
involving the programming and management of sensors, actuators, and car networks

advanced sensors, parking assistants, emergency braking, advanced cruise control, and the interpretation of human driving behavior
eventually: fully autonomous cars

watch out for: AURORA

V2V & V2I

key challenges: communication reliability, security, positioning accuracy & vehicle installation
solving the coordination challenge between manned & autonomous vehicles

V2V: sharing data on location, direction, speed, road condition, etc.
V2I: communicating with smart roadway infrastructure (traffic signals, roadway signage, borders, etc.)

watch out for: Autotalks

Artificial Intelligence (AI)

transforms driver monitoring, in-vehicle experience and in-cabin intelligence

driver monitoring to detect fatigue and distraction
incorporating AI assistants with advanced natural language capabilities
eye tracking, facial, emotion and gesture recognition contribute to drivers' and occupants' safety, entertainment, comfort and convenience

watch out for: German Autolabs

Electrification

vehicles powered exclusively by electricity and rechargeable batteries (EVs) will fully replace fuel-based vehicles
challenges remain: infrastructure & battery life; can be solved by startups

multifunction electrodes (MFE) incorporate high-power, rapid-charging rate capability with high-energy storage ability

watch out for: StoreDot

Blockchain

creating new business models and cooperation potential for OEMs, manufactures & mobility companies

preventing intentional undesirable interference in vehicle data
creating an accurate protocol enabling the tracking of parts of the supply-chain
bundling & storing car data in a way that data integrity is incontrovertible

watch out for: CyberCar

Augmented Reality

playing an essential role in the transition to level 5 autonomous vehicles

holographic AR technologies such as head-up displays (HUDs) for connected vehicles: navigation system, emergency alerts & personalized content

watch out for: WAYRAY

Big Data

Big Data collected from sensors, IoT and mobile devices creates opportunities for new business models and applications.

enabling engineers to design road flows according to actual traffic patterns
fleet learning, data-enabled features, and car data monetization
enabling predictive analytics and use of advanced analytics tools

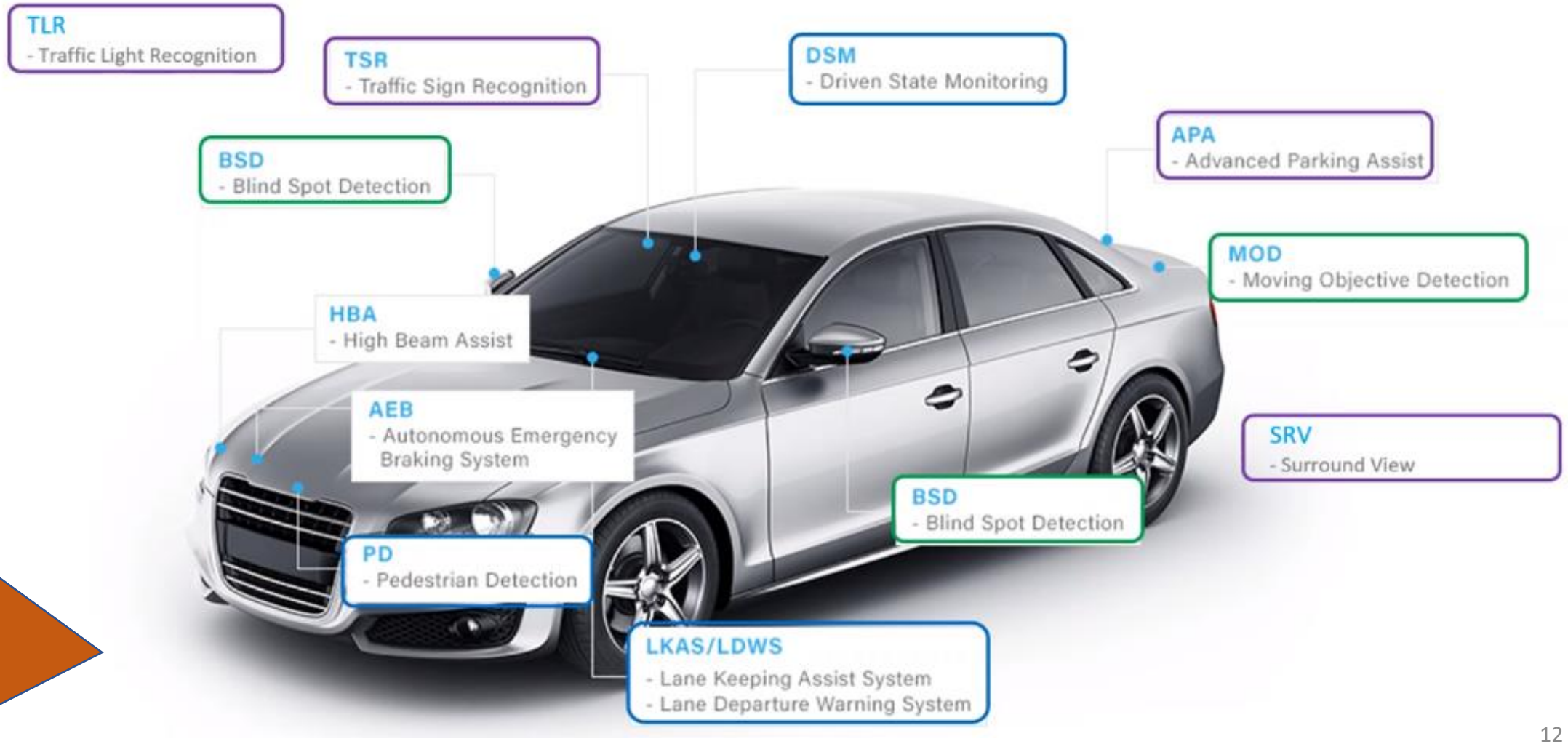
watch out for: otonomo

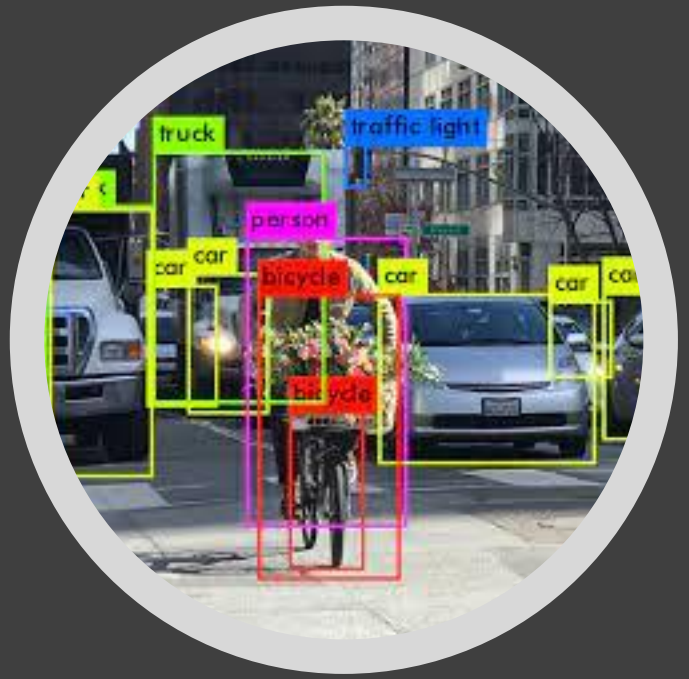
Concluding Lines for Upcoming Innovation in Automotive Industry

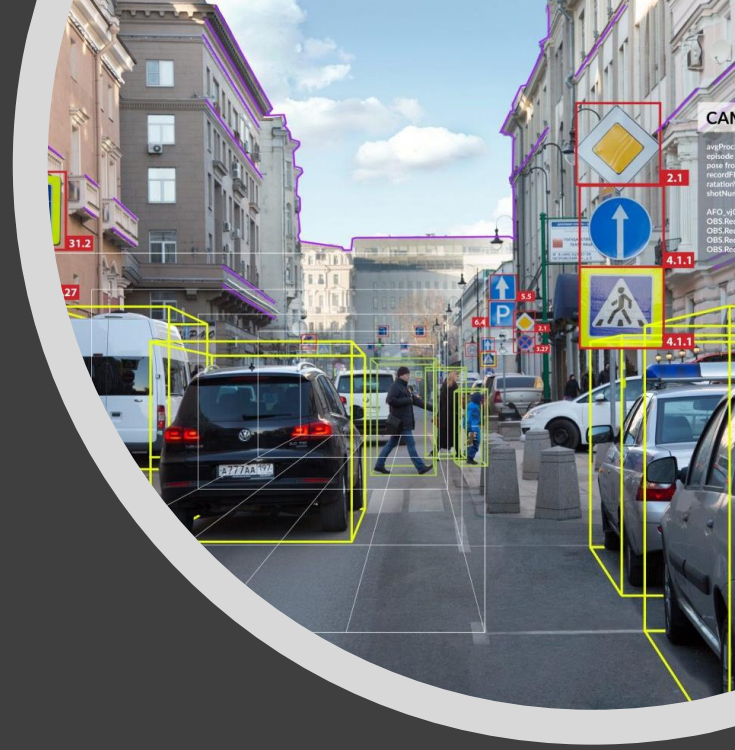
- Automobile manufacturers are redefining their processes with AI-based automated inspections, big data to influence design and production, and human-machine interfaces. The new or upcoming innovations in automobile industry like machine intelligence and the Internet of Things are bolstering the demand for electric and self-driving vehicles.
- New business models in shared vehicle ownership, analytics-driven maintenance, safety improvements, and insurance are also possible. Furthermore, startups and growing businesses create technologies that allow vehicles to communicate and transact over the internet safely.
- Every year, the automotive industry experiences a boom in demand with breakthrough technologies. Industrialists and researchers are developing cutting-edge manufacturing methods to suit these demands. Car manufacturers worldwide are employing numerous approaches to provide end-users with the best and most creative technologies.
- The auto industry will be greeted in the following years by a slew of new technological advances that will transform the industry's landscape around the world!

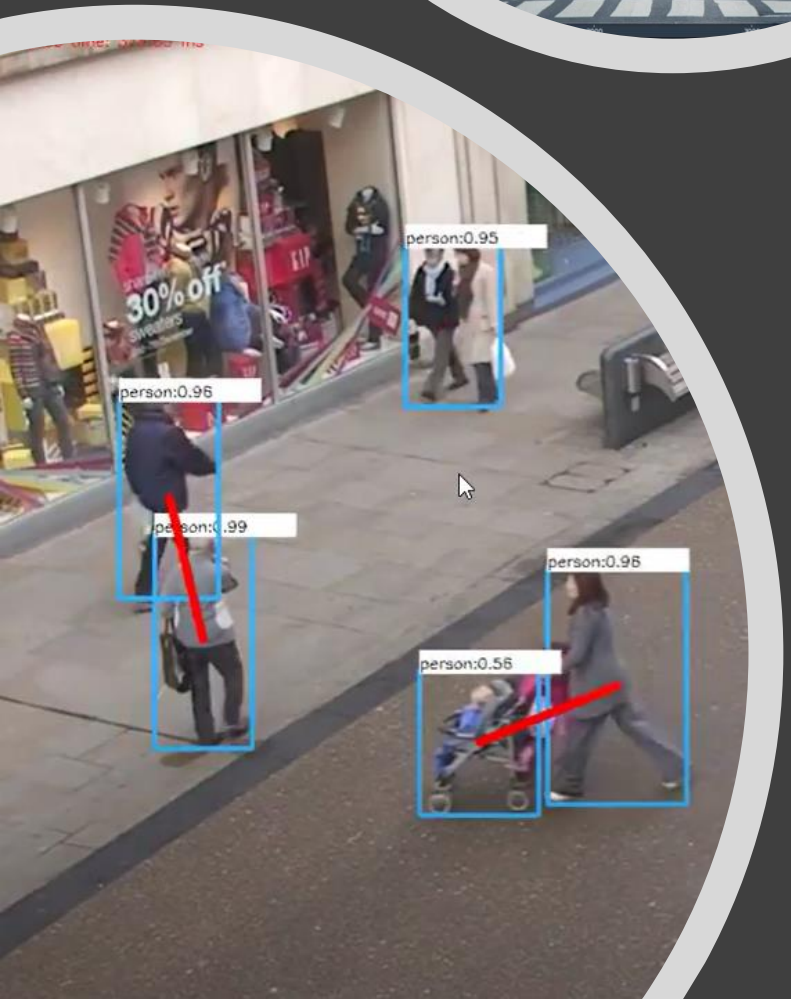
AI Based Automotive Applications

DMS /ADAS/OMS

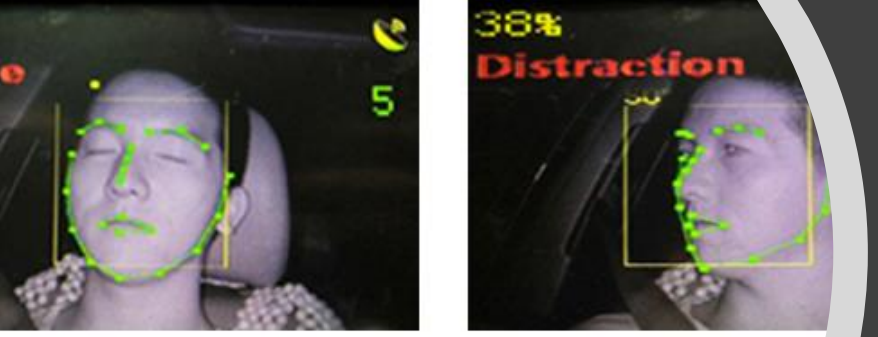

TLR
- Traffic Light Recognition
TSR
- Traffic Sign Recognition
DSM
- Driven State Monitoring
APA
- Advanced Parking Assist
BSD
- Blind Spot Detection
MOD
- Moving Objective Detection
HBA
- High Beam Assist
AEB
- Autonomous Emergency Braking System
SRV
- Surround View
BSD
- Blind Spot Detection
PD
- Pedestrian Detection
LKAS/LDWS
- Lane Keeping Assist System
- Lane Departure Warning System

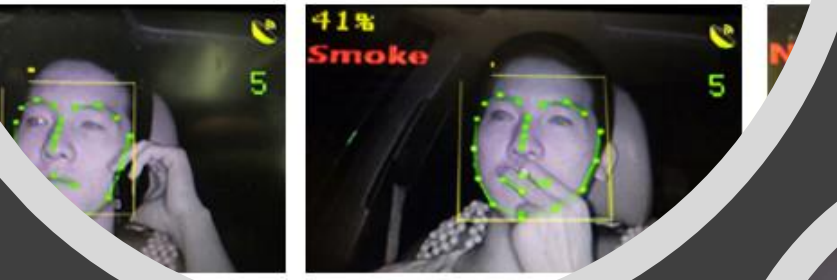






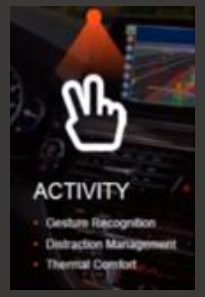
ADAS (Advanced Driver Assistance System)

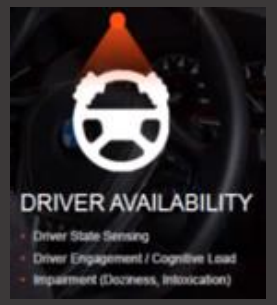


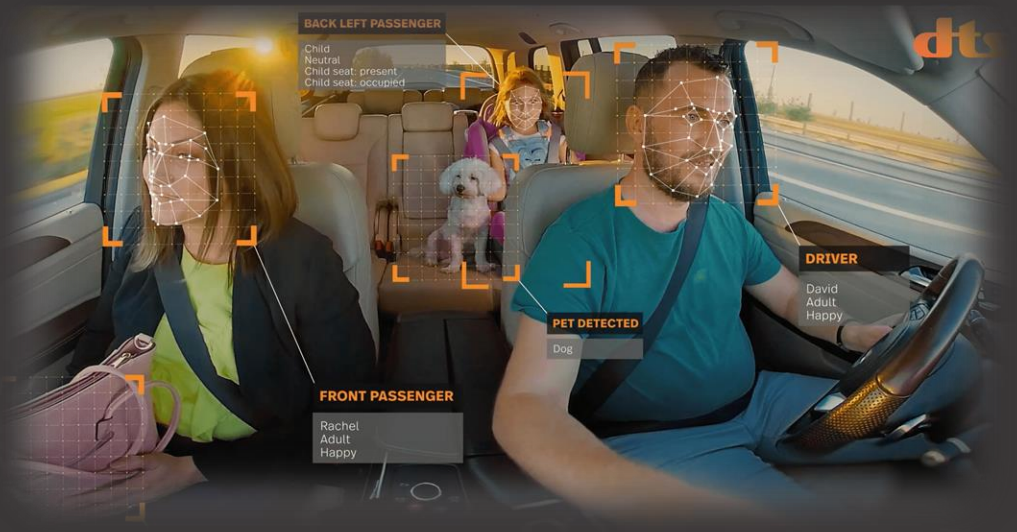


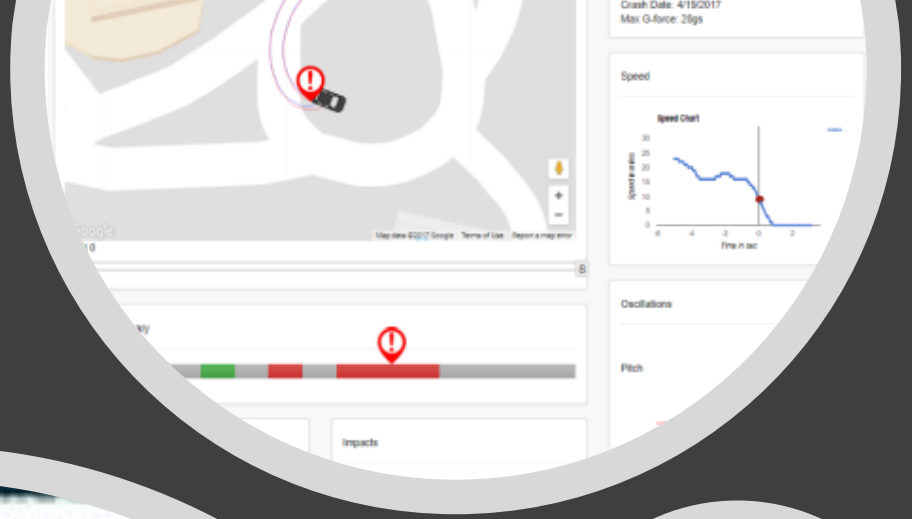
DMS (Driver Monitoring System)

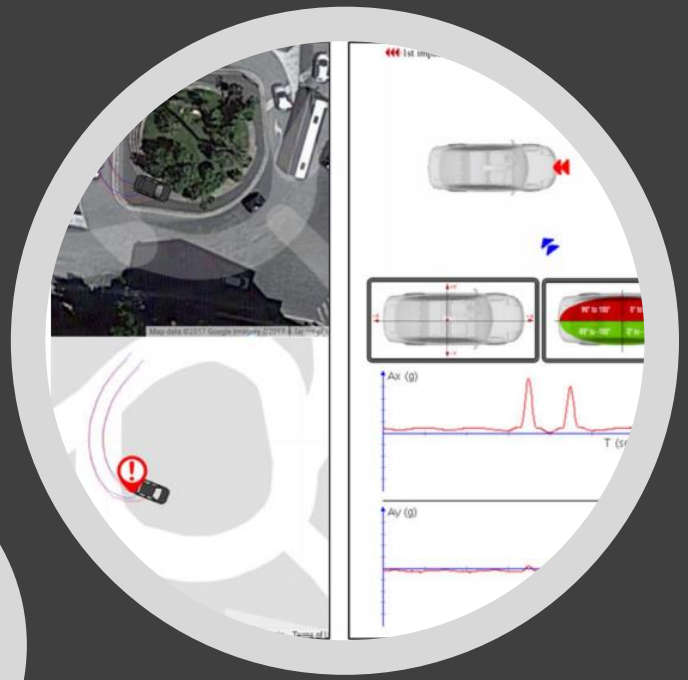
OMS (Occupants Monitoring System)





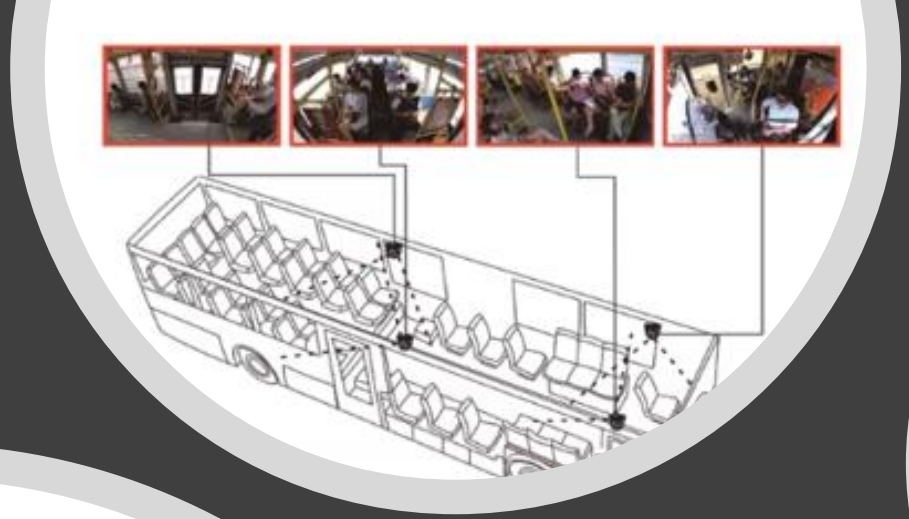




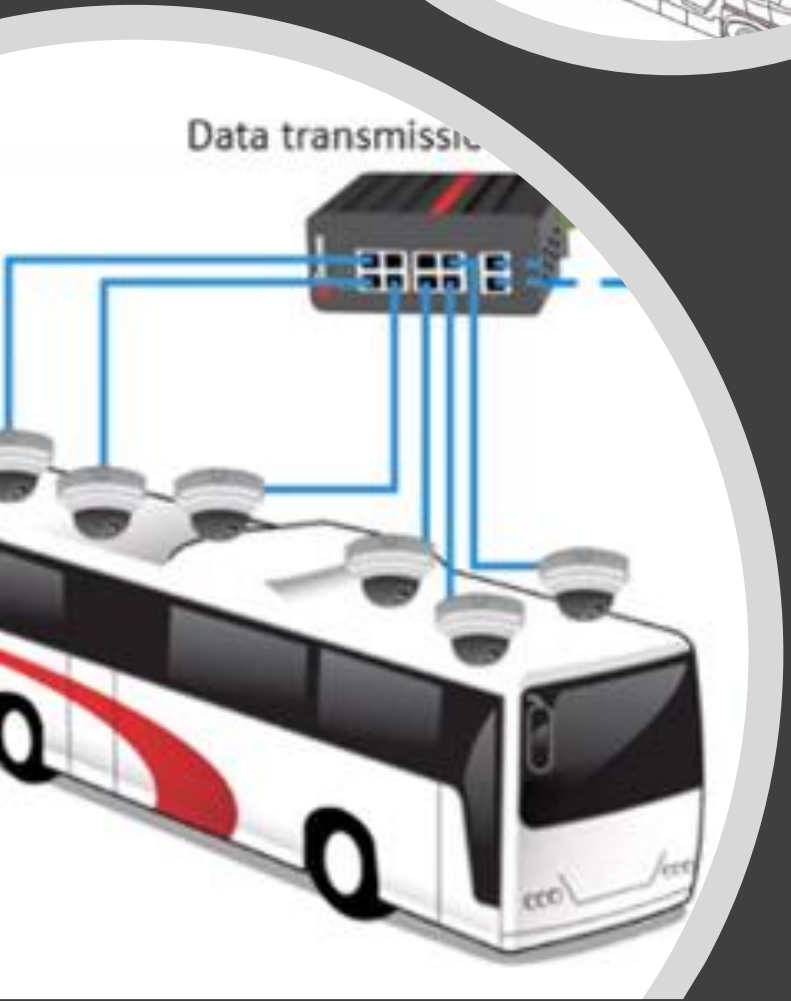


Crach management, telematics and driver behaviour

LIDAR, RADAR, GPS, DASHCAM

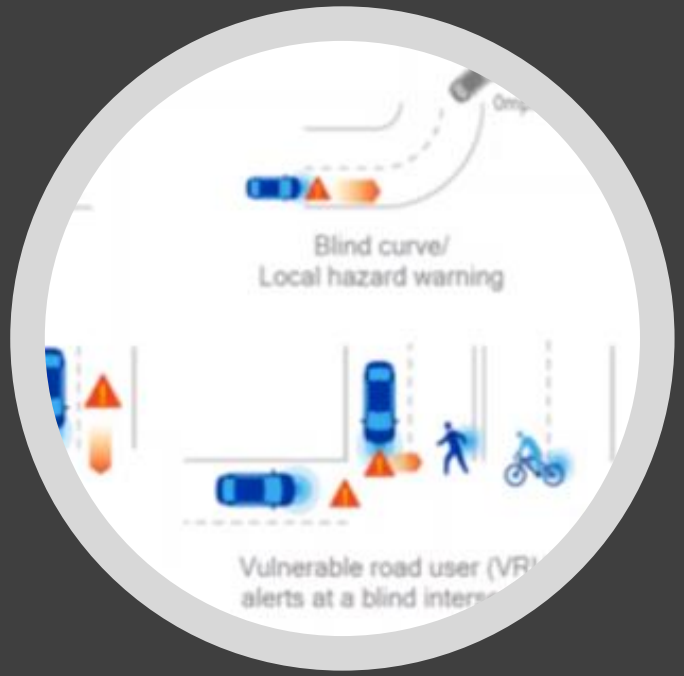



IN-CAB CAMERA
SCANIA


Data transmissi

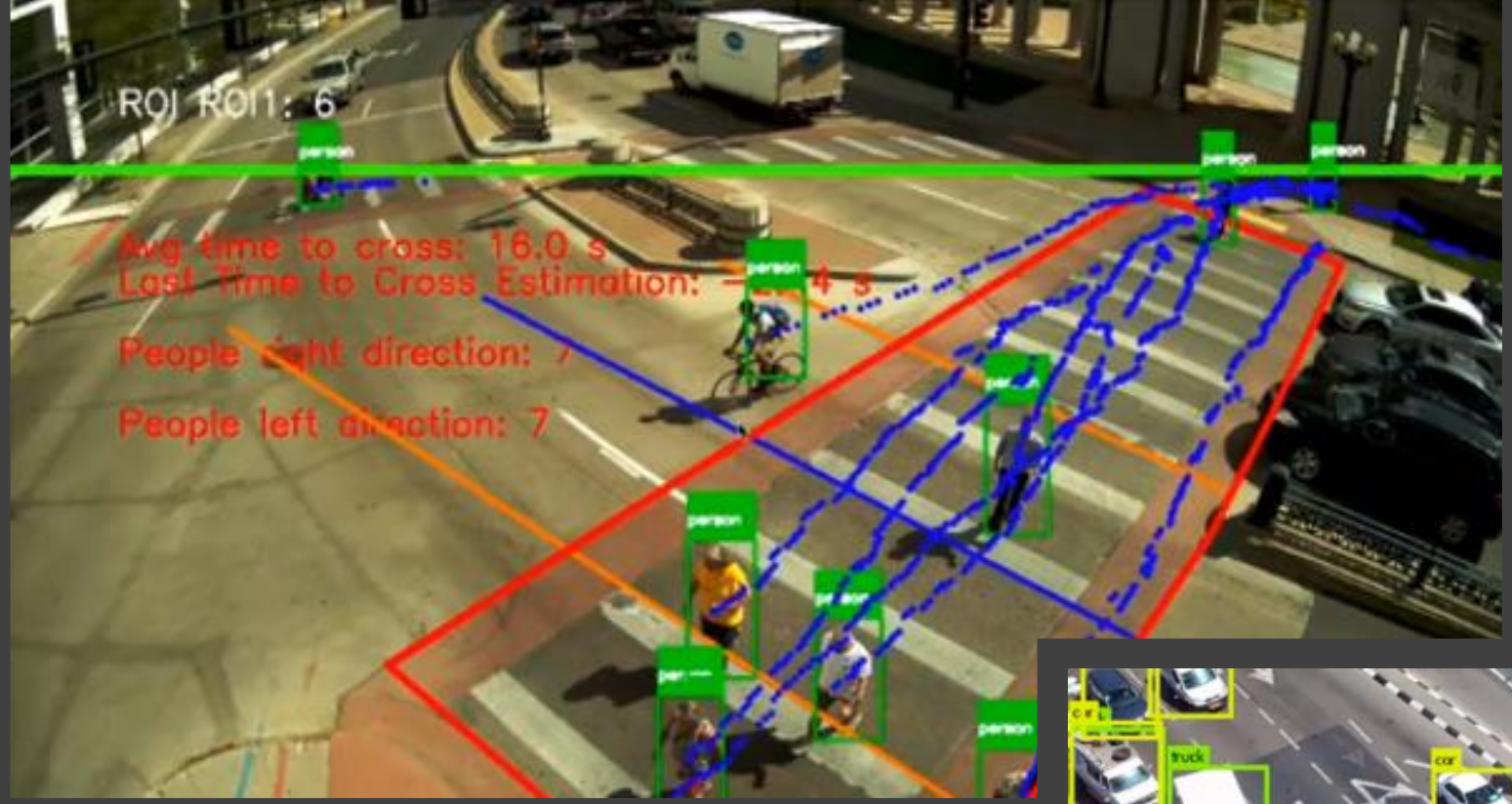
SMART BUS

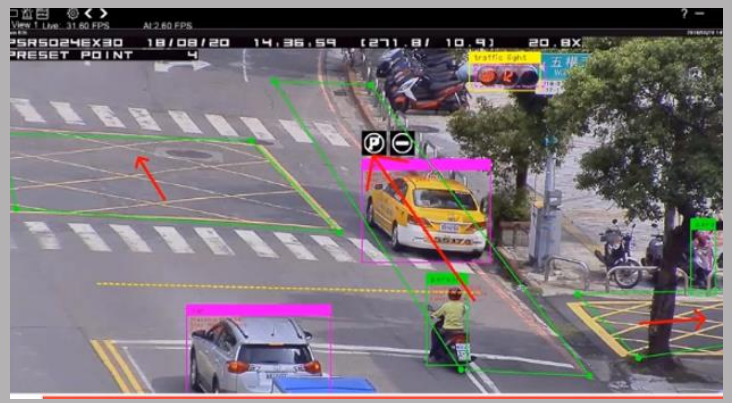

SMART BUS
alamy stock photo

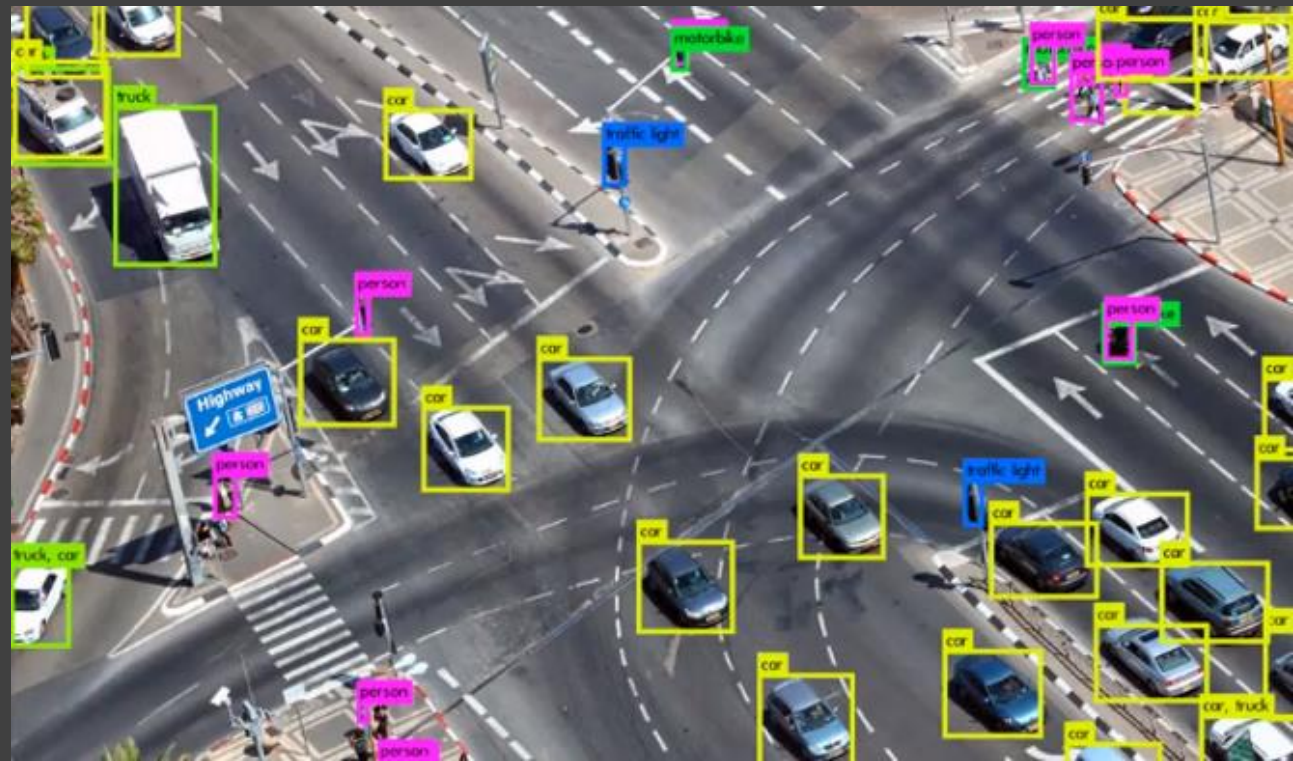


C-V2X services

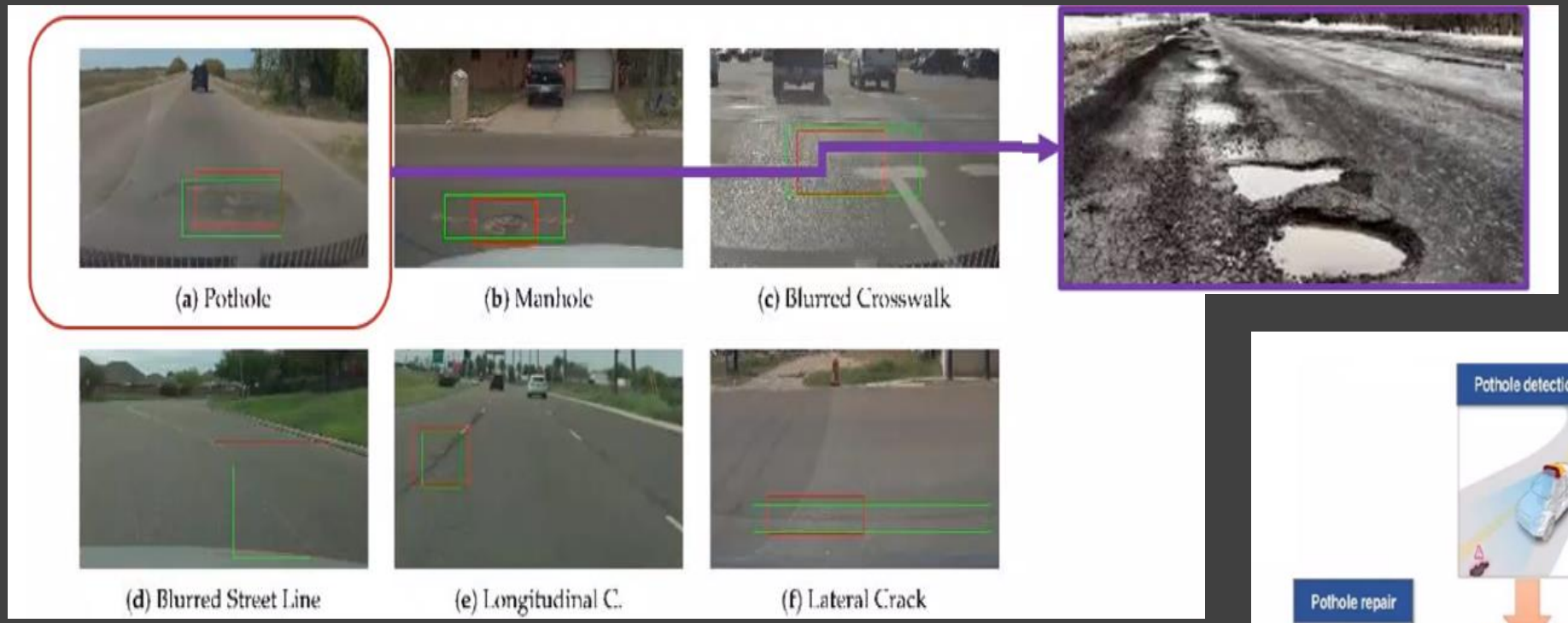
Road Trafic management

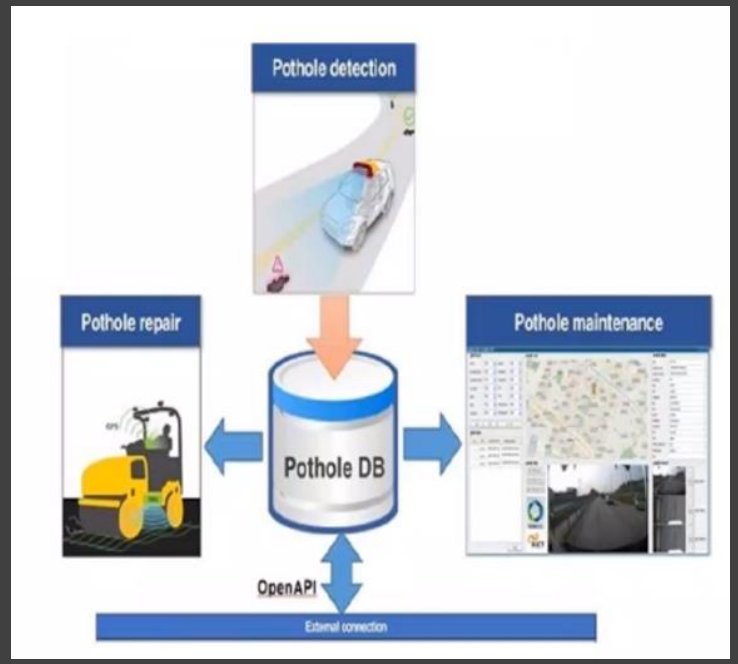


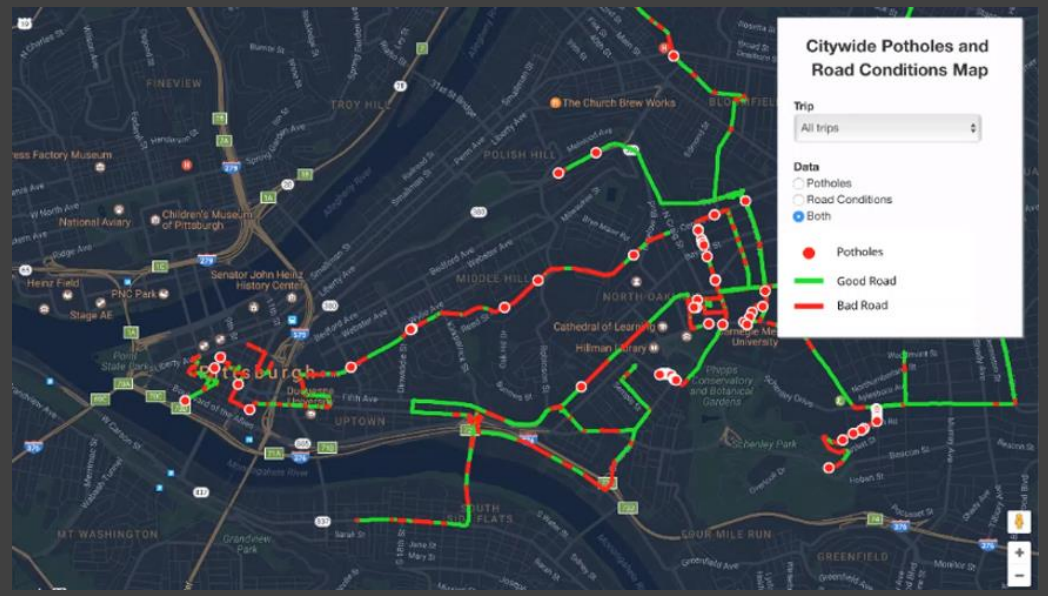




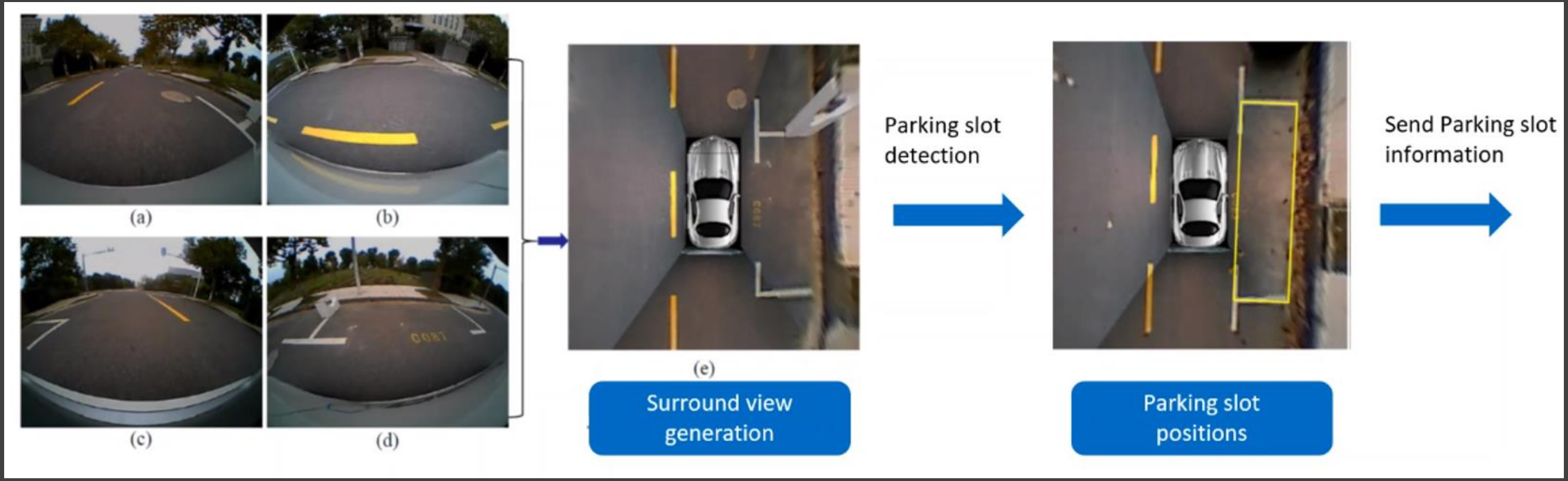
Emergency vehicles priority

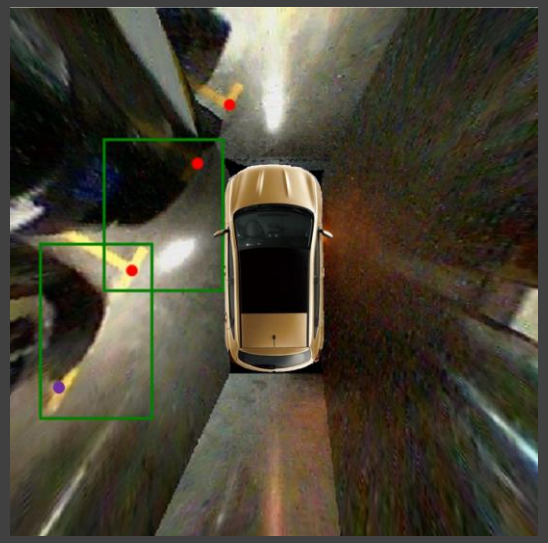


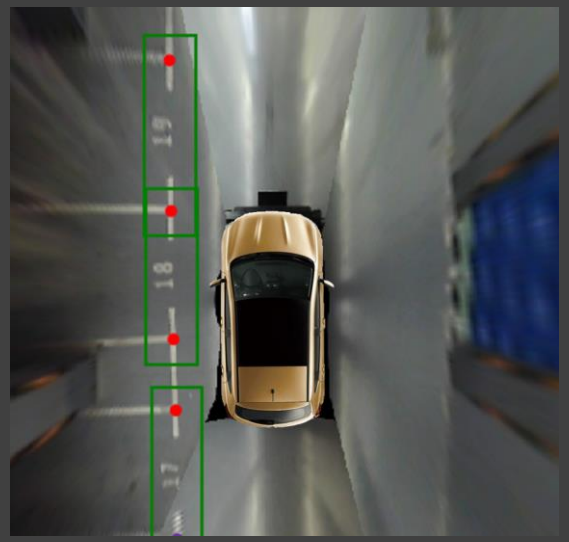




City Petholes detection







Parking slot detection

And many others !

Thank you for your attention
&
Good Luck