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Perspective

The Advanced Automatic Car and its Manufacturing Process

Farrukh Ansari *

Department of Engineering, Azam University, Islamabad, Pakistan

DESCRIPTION

An autonomous vehicle can recognize the surrounding and purpose without the use of human control. An autonomous vehicle is sometimes known as a self-driving vehicle or a vehicle without a driver. It executes software and travels between destinations without a human operator using a combination of sensors, actuators, machine learning systems, and complicated and powerful algorithms. "The sensors collect real-time data from the surrounding environment, such as geographical coordinates, vehicle speed and direction, acceleration, and potential obstructions." The automatic gearbox uses mechanical components to shift ratios without requiring the driver to operate the gear lever or clutch. It is becoming increasingly popular in India because to its ease of usage. Automatic gearboxes were deemed costly and only accessible with luxury cars, and were exclusively available to the rich. That, however, has just altered. Automobile makers have developed unique items that include automatic gears of various types and sizes. Notifications regarding crashes, earlier warnings about accidents, road construction, over-speed, traffic signals, fog warnings, the presence of black ice, and some location-based services are among the most recent advances in the VANET (Vehicular Ad Network) technology's applications and services. There has been a lot of buzz regarding self-driving automobiles. Technology from various disciplines must be blended in order for an autonomous car to navigate effectively. Computer science, electrical engineering, and mechanical engineering are examples of these disciplines. Car navigation is accomplished through the use of a navigation system that includes a Global Positioning System (GPS) and a Geographic Information System (GIS) to collect location data such as latitude and longitude. The relative vehicle location is determined by the location system's Inertial Navigation System (INS). Information on traffic and road facilities, among other things, is stored on an electronic map. HD map is an electronic map now available for self-driving automobiles that can be used in level 2 and level 3 self-driving. Map matching, which calculates the car's location, is the primary method for path planning. Laser perception, optical perception, and radar perception are the three main modalities for detecting the surroundings. The idea of reflection time and reflection signal strength is utilized in laser perception to obtain cloud data about a target point's location, status, and form. The Light Detection and Ranging (LIDAR) system is used to avoid accidents and in instances where emergency braking is required. Multiple laser pulses are emitted every second by LIDAR devices.

Steps of car manufacturing

Engine workshop: This is the location where engine blocks are manufactured according to specifications and other engine fragments are gathered. This workshop completes the machining of gear breaks, shafts, and gear box assembly. The gearbox is transported to the engine workshop, where it is fitted with the engine and a component known as the power train is created.

Press workshop: Sheet metal processing takes place in this workshop, which also produces various panels for the automatic automobile, such as doors, pillars, hoods, and roofs, among other things. The panels have been welded together, and the body is now known as a body in white (BIW signifies Body Initial Welding).

Paint workshop: As the names indicate, the painting of the entire body is accomplished, and the painted body is shipped to be assembled.

TCF workshop: This is the final workshop where the engine is assembled with the body, as well as other parts such as wheels, dashboards, wind shields, and air conditioners.

CONCLUSION

Finally, several testing are performed, including shower, DLT, and drive tests, before an automatic car is released from the unit. These steps depict the assembling, painting, and inspection phases of an automatic car's production.

Correspondence to: Farrukh Ansari, Department of Engineering, Azam University, Islamabad, Pakistan, E-mail: Ansariif123@gmail.com

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