

# Autonomous Vehicles

There's no question that self driving (autonomous) vehicles are already starting to revolutionize the automobile industry. They are being manufactured and tested internationally.

## Rely on GPS & Sensing Systems

Autonomous vehicles can drive, steer, brake, and park themselves. GPS capabilities help them do all of these things. These vehicles also have advanced sensing systems that detect signs, signals, unexpected obstacles, and lane boundaries.

### Advantages



#### Fewer Accidents

94% of vehicle accidents can be linked to driver error. Autonomous vehicles could decrease human error, thus making roads safer.

#### Reduced Driver Stress

A fully automated vehicle will take care of driving tasks, including monitoring weather and road conditions, traffic issues, and parking.

#### Increased Mobility for Non-Drivers

People with disabilities who are prevented from driving traditional vehicles will have the ability to drive.

#### Lower Traffic Congestion

Advanced notice of a vehicle slowing ahead can reduce the ripple effect of abrupt slowing and/or stopping that eventually leads to gridlock.

#### Fuel Costs Savings

Hard braking and stop-and-go driving are proven to increase fuel usage. Autonomous vehicles include a communication system to reduce this.

### Disadvantages



#### Cost

High-tech vehicles are more expensive. A large amount of money goes to cover research, development, software, modified vehicle parts, and sensors.

#### Prone to Hacking

Autonomous vehicles could be the next target for hackers since the vehicle tracks and monitors details of the owner and their personal data.

#### Safety & Security Concerns

Technology is constantly updating, a faulty code could cause accidents.

#### Fewer Job Opportunities

The need for drivers of taxis, trucks, and buses may be reduced, which could impact employment rate and economic growth.

#### Non-functional Sensors

Severe weather, such as snowstorms or extreme temperatures, could cause sensors to fail.

## By 2040

Currently, consumers can buy vehicles with advanced technology called Advanced Driver-Assist Systems (ADAS). However, before vehicles reach full autonomy, they must pass various levels of driver-assisted technology. Some experts predict, there will be 33 million autonomous vehicles on the road by 2040.

# Different Levels of Vehicle Autonomy

Autonomous vehicles must pass through various levels of driver-assisted technology. The Society of Automotive Engineers have developed levels of vehicle automation.

