The different sensors used to obtain the data which is fed into the navigation stack for autonomous systems are:

VISIBLE LIGHT CAMERAS:
-Can be used to detect painted road markings and traffic signs.
-Image data produced can be fed to AI-based algorithms for object classification.
-Their limited capabilities under conditions of low visibility (like smog/night driving) is a drawback.

RADAR:
-Works by transmitting radio waves in pulses.
-When the waves hit an object and return to the sensor, they provide data on the speed and location of the object.
-Can supplement visible light cameras in times of low visibility.

ULTRASONIC SENSORS:
-Provides an analogue output voltage, correlated to the distance of vehicle from an object.
-Range is limited to only a few metres, but they provide additional sensing capabilities to support low-speed use cases.

LiDAR:
-Emit laser beams at eye-safe levels. Therefore, visibility is not an issue.
-Beams hit objects in the environment and return to photodetector. Returned beams are used to create 3D image of environment.
-A 360 degree rotating LiDAR sensor on the roof of the car can provide complete view of their surroundings.

SENSOR FUSION:
-Sensor fusion is the process of collecting inputs from all the above sensors to interpret environmental conditions.
-Since none of the above sensors can detect all aspects of the environment perfectly, we use output from all of them to paint a more accurate picture of the surroundings.
-The algorithms dependent on these sensor fusion data then processes it and allows the vehicle to take the right course of action.