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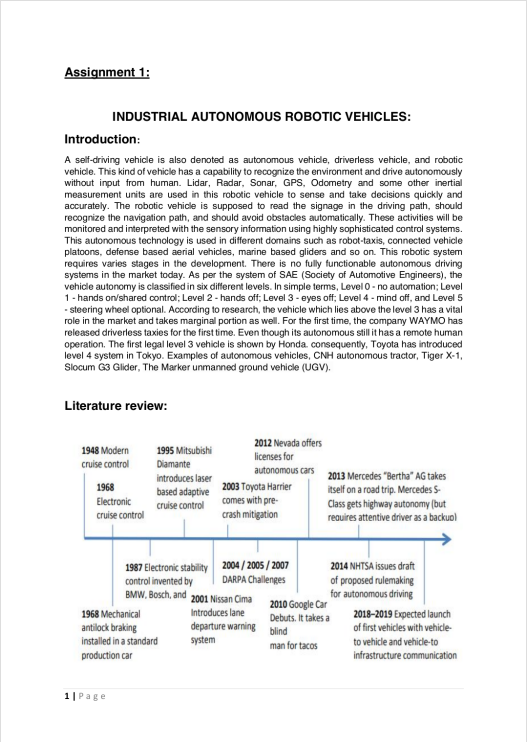

Assignment 1:

INDUSTRIAL AUTONOMOUS ROBOTIC VEHICLES:

Introduction:

A self-driving vehicle is also denoted as autonomous vehicle, driverless vehicle, and robotic vehicle. This kind of vehicle has a capability to recognize the environment and drive autonomously without input from human. Lidar, Radar, Sonar, GPS, Odometry and some other inertial measurement units are used in this robotic vehicle to sense and take decisions quickly and accurately. The robotic vehicle is supposed to read the signage in the driving path, should recognize the navigation path, and should avoid obstacles automatically. These activities will be monitored and interpreted with the sensory information using highly sophisticated control systems. This autonomous technology is used in different domains such as robot-taxis, connected vehicle platoons, defense based aerial vehicles, marine based gliders and so on. This robotic system requires varies stages in the development. There is no fully functionable autonomous driving systems in the market today. As per the system of SAE (Society of Automotive Engineers), the vehicle autonomy is classified in six different levels. In simple terms, Level 0 - no automation; Level 1 - hands on/shared control; Level 2 - hands off; Level 3 - eyes off; Level 4 - mind off, and Level 5 - steering wheel optional. According to research, the vehicle which lies above the level 3 has a vital role in the market and takes marginal portion as well. For the first time, the company WAYMO has released driverless taxies for the first time. Even though its autonomous still it has a remote human operation. The first legal level 3 vehicle is shown by Honda. consequently, Toyota has introduced level 4 system in Tokyo. Examples of autonomous vehicles, CNH autonomous tractor, Tiger X-1, Slocum G3 Glider, The Marker unmanned ground vehicle (UGV).

Literature review:

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