The United States National Highway Traffic Safety Administration has adopted since 2016 SAE's classification for the autonomy of cars; level 1 (no automation), level 2 (drive assistance), level 3 (partial automation), level 4 (conditional automation), and level 5 (full automation). The highest level of autonomy refers to self-driving cars, meaning cars that operate without the intervention or even presence of people (National Highway Traffic Safety Administration, 2016).

Self-driving cars will perform all the tasks that are performed today by the human beings and in turn a computer system will be responsible for its actions. In particular, cameras and sensors integrated in the car will capture images and sounds of the surroundings and through deep learning analysis the self-driving car will be able to identify objects such as other vehicles, road signs, pedestrians, obstacles, and traffic lights, and navigate roads safely (Zhao et al., 2017; Borenstein et al., 2017).

Though such application may benefit the society by freeing human beings time and reducing their stress level, the complexity of reality and the decisions that a human being should take when driving pose significant concerns regarding self-driving cars. Safety and security are two of the areas of primary concern where malicious use could have severe impact. For example, the software used by self-driving cars is prone to cyber-attacks and in such a case this could lead to manipulation of the car's behavior resulting in intentional or unintentional car accidents causing human lives. In addition, the fact that sensors and cameras are being used to capture images or sounds could potentially invade personal data, resulting in privacy issues. Finally, responsibility, especially when it comes to accidents, is another great concern (Hansson et al., 2021; Bakioglu and Atahan, 2022; Bocca and Baek, 2019).

To sum up, self-driving cars is an application of deep learning that has already started and is going to have an impact on society soon. Though benefits for human beings and society are obvious, such applications have an impact in terms of safety, security, privacy and responsibility that should be carefully considered and mitigated.

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