Report on AI in Autonomous Vehicles

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***Abstract*—**

I. Introduction

The technology in automobile industry has made some remarkable progress the last century. They have managed to make safe, reliable and affordable vehicles. The last couple of decades have seen significant advancements in computation and communication technologies, and consequentially autonomous vehicles are now becoming a reality [**?**]. Several prototypes exists today. Among others, Volvo have started implementing autonomous trucks that deliver goods [**?**].

A. Autonomous vehicles

1) What is it?: A definition of autonomous vehicle (AV) can be a vehicle which senses it's environment with little or no human input or interaction [**?**]. This means that the vehicle is capable of gathering information about the environment around it such as objects, temperature, position, velocity etc. And execute tasks or functions according to certain directives.

2) Why?: Humans are biological lifeforms which depends and reacts on, among other things but not limited to, sleep, food, stress, isolation, social interactions and other similar processes. Besides beeing complex lifeforms humans react differently to these processes choices taken, in certain situations, differ greatly.

Machines today are not dependent on such stimuli and therefor they can, theoretically, continue with tasks to an infinite amount of time. At mundane and repeated tasks such as arithmetic calculations or retaining huge amounts of data, machines and computers excel with unrivalled precision and accuracy. This makes them good candidates for making pure rational and logical decisions based on optimal outcomes of certain criteria.

Based on this assessment machines would take more optimal chooices over time in comparison with the average human. And their choices would be easier to determine based on simulations and testing scenarios. This would make outcomes and outputs deterministic and easy to predict and consequentially present a good basis for development and optimization.

3) Terms: