A review of reinforcement learning and deep reinforcement learning for coordination in intelligent traffic light control

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Abstract— **Intelligent traffic signal control is required for a transportation system to function properly. In contrast to existing traffic signals, where rules are typically developed manually, an intelligent traffic signal control system should dynamically adapt to real-time traffic. The use of reinforcement learning for intelligent traffic signal control is a growing trend, and recent studies have shown promising results.**

This paper presents the primary techniques learning and methods (RL, DL, DRL). The analysis of each technique, the learning of its strengths and limitations.

***Keywords— —Reinforcement Learning; Deep Reinforcement Learning; Traffic Light Control; Simulators*.**

I. INTRODUCTION

Intelligent traffic light systems [6] have attracted the interest of many researchers.Their approach in the transport domain is to present traffic light control as an optimisation problem in an automated and adaptive way under certain assumptions, some of which deviate from the real world (e.g. driver and pedestrian behaviour, weather conditions). We offer traffic light control systems to efficiently detect and manage urban traffic

we focus essentially in the strong points and limitations or challenges the RL and DRL methods studied, as well as , the traffic simulators used

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