DEEP Q NETWORK FOR AUTONOMOUS VEHICLES

The world of transportation is on the verge of a profound transformation, and at the heart of this revolution are autonomous vehicles. Over the years, significant advancements have been made in autonomous vehicle technology, bringing us closer to a future where vehicles can navigate our roads with minimal human intervention. These vehicles have the capability to navigate and operate without human intervention, relying on a combination of advanced sensors, machine learning algorithms, and onboard computer systems. Technological improvements in AI algorithms have led to revolutionize transportation by reducing accidents, enhancing traffic flow, and providing newfound mobility to individuals who were previously unable to drive.

The primary aim of this seminar is to serve as a stepping stone into the field of Deep Q networks. DQN was introduced by Volodymyr Mnih in 2015 and has since become a foundational algorithm in the field of deep reinforcement learning. It builds upon the principles of reinforcement learning and Q-learning, with the addition of deep neural networks to approximate the Q-values, which represent the expected cumulative rewards for taking actions in a given state where the vehicle needs to navigate its environment and make choices.This seminar provides a comprehensive overview of core concept of Deep Q networks, discussing the significance and technical improvements of DQN in the context of autonomous driving.

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References

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