In the bustling streets of our capital Dhaka the sheer volume of vehicles navigating the roads presents a daily challenge for commuters, law enforcement, and transportation authorities alike. With an ever-growing population and a rapid increase in vehicle ownership, ensuring the safety and fitness of these vehicles has become a pressing concern for public safety and urban infrastructure management.

Currently, the number of authorised (registered) vehicles in the BRTA is 55,82,310. From the BRTA report, we can see that the number of authorised vehicles up to June 2020 was 4471625. Thus, it reveals that the number of authorised vehicles is increasing. The BRTA report also shows that among the 58 lakh vehicles plying the roads, 72 percent lack fitness clearance. Moreover, vehicles like easybike, nasimon, karimon, and votvoti plying the roads without permission increase the chance of road accidents. There were around 481,029 unfit vehicles in Bangladesh up to June 2021.

The traditional methods of vehicle inspection and fitness assessment in Dhaka, as in many cities around the world, are often labour-intensive, time-consuming, and prone to human error. Manual inspections conducted by trained personnel are limited in their scope and effectiveness, leading to significant gaps in identifying potential safety hazards and mechanical faults in vehicles.

In this context, our project seeks to leverage the power of deep learning technologies to revolutionise the process of assessing vehicle fitness in Dhaka. By harnessing the capabilities of machine learning algorithms, we aim to develop a system capable of analysing images or sounds (or both) of road-going vehicles to determine their fitness and identify any potential issues or anomalies.

The motivation behind our project is multifaceted:

1. Enhancing Road Safety: The primary motivation is to enhance road safety by ensuring that vehicles operating on Dhaka's roads meet the necessary fitness standards. By identifying and addressing potential safety hazards and mechanical defects in vehicles, we aim to reduce the risk of accidents and improve overall road safety for commuters and pedestrians alike.
2. Improving Efficiency: Current methods of vehicle inspection and fitness assessment are time-consuming and resource-intensive. By automating the process using deep learning technologies, we aim to improve efficiency and streamline the inspection process, enabling more vehicles to be assessed in less time and with greater accuracy.
3. Addressing Urban Challenges: Dhaka's rapid urbanisation and population growth have led to increased congestion and pollution levels. Ensuring the fitness of vehicles is essential for mitigating these urban challenges and promoting sustainable transportation practices in the city.
4. Empowering Stakeholders: Our project aims to empower stakeholders, including transportation authorities, law enforcement agencies, and vehicle owners, with the tools and technologies needed to make informed decisions about vehicle safety and maintenance. By providing a reliable and scalable solution for assessing vehicle fitness, we seek to enhance transparency and accountability in the transportation sector.

In summary, our project is driven by a commitment to enhancing road safety, improving efficiency, addressing urban challenges, and empowering stakeholders in Dhaka's transportation ecosystem. By leveraging the potential of deep learning technologies, we aspire to make meaningful contributions towards creating safer, more sustainable, and more resilient urban environments.