Topic: **Towards Avoiding Traffic Jams in Large Cities**

Abstract:

The effective and efficient functioning of transportation infrastructure is a key determinant of citizens' well-being. The movement of people, the delivery of goods, and the provision of services are all reliant on transportation. While digital technologies are increasingly influencing various aspects of our lives, leading to shifts in tools and approaches, transportation remains a critical factor in enhancing citizens' quality of life. This is relevant for both private and public transport systems.

It is important to acknowledge that the number of vehicles on the road is consistently increasing. While this expansion can satisfy certain well-being needs, it also poses challenges that may hinder the fulfilment of these needs adequately, particularly in terms of capacity and timely service. This issue is especially pronounced in densely populated urban areas, where traffic congestion can lead to delays in transportation, goods delivery, and commuting.

Moreover, the environmental impact of increasing vehicle numbers cannot be overlooked, as road congestion contributes to air pollution from emissions.

The goal of this study is to explore opportunities for optimizing the flow of private vehicle traffic in large cities and to develop a comprehensive model that addresses the interests of private car owners, municipal authorities, and overall resident well-being. This model will incorporate a time-based financial incentive system, such as the implementation of a city road toll in designated metropolitan areas, alongside proposals for improving roadway infrastructure and traffic management.

The methodology will utilize data from TomTom, cartographic resources, and other relevant traffic flow and satellite information. The proposed solution will adopt a dual approach: (a) designing a survey to gather insights on citizens' driving habits, preferences regarding travel times, willingness to adjust daily schedules, and various payment options, such as toll fees with motivational incentives; and (b) analysing best practices and case studies from other major cities worldwide.

Moreover, the topic of electric vehicles will be taken into consideration, with an emphasis on their expected growth trajectory and the potential for these cars to achieve a significant market presence in the coming decades.