
Departmental Seminar

Seminar Title	: Dynamic Lane Change Coordination and Platoon Management in Vehicular Ad Hoc Networks
Speaker	: Biraja Prasad Nayak (519cs1005)
Supervisor	: Sumanta Pyne, PIC Seminar
Venue	: Conference Hall of CSE Department
Date and Time	: 23 Sep 2024 (17:30)
Abstract	: Highway traffic optimization through vehicle platooning presents a promising avenue for improving road capacity and energy conservation. Leveraging Vehicular Ad Hoc Networks (VANETs) technology, particularly in the context of Automated Vehicles (AVs), offers an opportunity to address specific challenges associated with dynamic lane change coordination and platoon management. In this paper, advanced algorithms are developed to enhance traffic flow efficiency and expedite information exchange among platoon members. This research work focuses on the development of specialized rules governing the behavior of vehicles during lane changes within platoons. These rules aim to facilitate smooth transitions and prevent traffic-related issues. Additionally, the study seeks to enable vehicles to swiftly adjust their speed and spacing to ensure seamless operations. The proposed algorithms take into account real-time traffic data, platoon capabilities, and platoon characteristics, thereby optimizing platoon dynamics. To bolster safety, the integration of collision avoidance mechanisms is explored, which helps maintain appropriate inter-vehicle distances during lane changes. By addressing these intricate aspects of VANET-enabled vehicle platooning, this research contributes to the efficient and secure deployment of autonomous vehicles on highways, ultimately advancing the potential benefits of platooning technology for modern transportation systems.