

Seminar Title	: Federated Learning Model for IoT Devices towards Communication-Efficient
Speaker	: Vipul Singh Negi (Rollno : 521cs1007)
Supervisor	: Prof.(Ms.) Suchismita Chinara
Venue	: Convention Hal of CSE department
Date and Time	: 17 Dec 2024 (4:00pm)
Abstract	: The challenges of handling decentralised data lead to the demand for research on secure gathering, efficient processing, and analysing of the data. In decentralised systems, each node (device) can make independent decisions, reducing the complexity and challenges of dealing with extensive data. Privacy has become a significant concern for our society due to the rise in the number of Edge/IoT devices, lack of presence of a centralised system etc. To solve this conundrum, federated learning was proposed. Federated learning works on the sharing of parameter values rather than the data. Worldwide 10.2 Billion non-IoT and 19.8 billion IoT devices will be active in 2023. These devices lack security when it comes to using traditional machine learning. However, federated learning models solve this problem using techniques such as Secure Aggregation and Differential Privacy, which provide security for the devices and efficient communication between them. The challenges arise from heterogeneous devices, leading to the client selection problem, unbalanced data, and many more problems. Our work focuses on providing federated learning strategies to solve problems in non-IoT and IoT-based devices.