

Synopsis Seminar

Seminar Title	: Performance Enhancement Strategies in Fog Computing Environment
Speaker	: Hemant Kumar Apat (Rollno : 519cs3009)
Supervisor	: Prof. Bibhudatta Sahoo
Venue	: Convention Hall (CS-208), CSE Department
Date and Time	: 18 Dec 2024 (10.30AM)
Abstract	<p>: In recent years, the proliferation of Internet of Things (IoT) devices has led to an unprecedented surge in data generation and processing demands. Fog computing has emerged as a promising paradigm to address these challenges by extending cloud capabilities to the network edge, enabling faster processing, reduced latency, and enhanced scalability. The research addresses critical challenges in deploying and operating Internet of Things (IoT) applications within Fog Computing environments. Fog Computing, a decentralized computing paradigm, provides computing, storage, and networking resources closer to data sources, enabling low-latency processing and context-aware services. This study identifies key issues such as resource management, scalability, security, and efficient task placement, and proposes innovative solutions to enhance system performance. The work involves developing novel Fog Computing architectures, heuristic-based dynamic clustering algorithms, and hybrid metaheuristic approaches to optimize IoT application placement.</p> <p>Additionally, the integration of blockchain technology is explored to secure distributed storage and ensure data integrity. Simulation results demonstrate the effectiveness of the proposed strategies in improving energy efficiency, reducing execution costs, and meeting Quality of Service (QoS) requirements for diverse IoT applications. This research significantly contributes to advancing Fog Computing's potential to support the growing demands of IoT, offering practical methodologies for IoT applications.</p>