National Institute of Technology Rourkela

Progress Seminar

Seminar Title	: Modelling and Analysis of Mechanobiological Behaviour of Human Tissues (with and without Damage) and Prediction of Diseases using Machine Learning Techniques
Speaker	: Ashish Kumar Meher (Rollno : 522me1015)
Supervisor	: Subrata Kumar Panda
Venue	: Seminar Hall (Ground Floor, ME-001), Mechanical Engineering Science Building
Date and Time	: 17 Apr 2025 (11.30 AM)

Abstract : Healthcare systems have changed significantly since the 1990s. Today's healthcare IT is much more standardized and has many security procedures in place, which is good. Still, it is challenging to deploy new AI and ML applications, especially for unestablished entities. Some of the challenges facing the modern healthcare system are a) Providing and demonstrating clinical value, b) Accessing relevant training data, c) Building user-friendly AI /ML applications, and d) Deployment and integration with clinical workflows. Initially, this research aims to study the material characteristics of different soft/hard tissues depicting the mechanical behaviour of hyperelastic material using available open-source data and extended to a kind of collaboration for the physiological study based on the mechanical characteristics of soft tissues, whereas other operational information related to hard tissue. Furthermore, some of the machine learning techniques are implemented to study the biological aspects of the human cells, and modelling will be done by using simulation software like DIGIMAT, ABAQUS, etc.