Mechanical Engineering: (Machine Learning project)

Problem statement No.39 – Predictive Maintenance of Industrial Machinery

The Challenge:

Develop a predictive maintenance model for a fleet of industrial machines to anticipate failures before they occur. This project will involve analyzing sensor data from machinery to identify patterns that precede a failure. The goal is to create a classification model that can predict the type of failure (e.g., tool wear, heat dissipation, power failure) based on real-time operational data. This will enable proactive maintenance, reducing downtime and operational costs.

Kaggle dataset link – https://www.kaggle.com/datasets/shivamb/machine-predictive-maintenance-classification

Technology – Use of IBM cloud lite services is mandatory.

Electronics and Telecommunications Engineering: (Machine learning project)

Problem statement No.40 – Network Intrusion Detection

The Challenge:

Create a robust network intrusion detection system (NIDS) using machine learning. The system should be capable of analyzing network traffic data to identify and classify various types of cyber-attacks (e.g., DoS, Probe, R2L, U2R) and distinguish them from normal network activity. The goal is to build a model that can effectively secure communication networks by providing an early warning of malicious activities.

Kaggle dataset link – https://www.kaggle.com/datasets/sampadab17/network-intrusion-detection

Technology – Use of IBM cloud lite services is mandatory.