NAME: UCHE PRECIOUS NDIDI

REG NO: 2022/HND/35568/CS

ASSIGNMENT ON COM 423 (ES/ML)

MACHINE LEARNING APPLICATION AS "HEALTHCARE" AND SPECIFICALLY FOCUS ON "DISEASE DIAGNOSIS".

PROBLEM STATEMENT:

Accurate and early diagnosis of diseases is a significant challenge in healthcare. Medical professionals face difficulties in diagnosing diseases due to various factors such as:

- Complexity of diseases
- Limited medical knowledge
- Inadequate medical resources
- High volume of patients

SOLUTIONS:

Machine learning can help in solving this problem by:

- Analyzing large amounts of medical data
- Identifying patterns and relationships between symptoms and diseases
- Developing predictive models for disease diagnosis
- Providing accurate and personalized diagnosis recommendations

ML ALGORITHMS:

- Supervised Learning: Decision Trees, Random Forest, Support Vector Machines (SVM)

- Unsupervised Learning: Clustering (K-Means, Hierarchical)

- Deep Learning: Convolutional Neural Networks (CNN) for image analysis (e.g., X-rays, MRIs)

DATA SET:

- Electronic Health Records (EHRs)

- Medical imaging data (X-rays, CT scans, MRIs)

- Lab test results

- Patient symptoms and medical history

Some specific datasets that can be used are:

- MIMIC-III (Medical Information Mart for Intensive Care III)

- NSCLC (Non-Small Cell Lung Cancer) dataset

- Cancer Genome Atlas (TCGA)

By applying machine learning algorithms to these datasets, we can develop predictive models that help medical professionals diagnose diseases more accurately and earlier, leading to better patient outcomes and improved healthcare services.