# **Disease Prediction System using Machine Learning**

# **A Project Report**

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# **Introduction to the Domain Area/Project**

Machine Learning is a branch of Artificial Intelligence (AI), where the main objective is

to give the computer the ability to learn from a provided set of data. The structure of the data is understood, after which the data is fit into models. These models can be successfully utilized by people for any given application where machine learning is required.

Despite being a field within computer science, it radically differs from the traditional computational approaches. In traditional computing, algorithms are sets of explicitly programmed instructions used by computers for calculations or problem-solving, whereas

Machine Learning algorithms allow for computers to train on data inputs and use statistical analysis in order to output values that fall within a specific range.

This approach in Machine Learning facilitates computers in building models from sample data, in order to automate decision-making processes based on data inputs.

Our project will be harnessing the potential of machine learning, in which a model will be trained in identifying various diseases included in our scope, where the output will be boolean values.

# **Problem Statement**

During the COVID-19 Pandemic, several hospitals faced a severe shortage of highly- skilled doctors. Despite the hard times, many doctors fulfilled their duty by being the first line of defense against the widespread pandemic.

Most of these doctors often required an expert system to help them aid in diagnosing a patient’s condition. However, it is necessary to realise that these expert systems may be much more useful if they could personalise the diagnosis for each and every patient with the help of an available doctor.

# **Motivation and Purpose of the project**

There has been an immense load on hospitals and doctors during the COVID-19 Pandemic, and helping the world to our best ability in these tough times is our goal.

Our aim is to reduce the pressure on doctors and hospitals by creating an expert machine that detects several major diseases.

With a well-defined scope and target to detect the common diseases, we aim to build a helpful prediction machine that will be of great help to medical professionals.

# **Project Scope and Objectives**

* Our model will have a Disease Detection System that will be based on Machine Learning.
* Our output will show if the patient has that particular disease and will give relative information related to the disease
* The Diseases that we are planning on targeting are:
  + Pneumonia
  + COVID - 19
  + Chronic Kidney Disease
  + Heart Attack

# **Plan of Action to Complete the Project**

1. Literature Survey
2. Identify and download Datasets
3. Identify the ML Algorithms
4. GUI Design
5. Integrate GUI and ML models
6. Testing the final implementation

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