ABSTRACT

Differential Diagnosis is a process of differentiating two or more condition which shares similar signs or symptoms. This is based on a knowledge of the pathophysiology of the presenting signs and symptoms, and the natural history of various diseases and their causative agents. This process becomes cumbersome when the symptoms and patients history is complex. This challenges faced in the differential diagnosis are diagnosing the disease of the patients golden time and also keeping in account the vast knowledge of the symptoms.

We aim to tackle the poor rate of diagnosing, finding the accurate disease and commencing the treatment. Due to the lack of knowledge and loss of information there's been a negative diagnosis. We focus on utilizing the golden hours for diagnosing rather on treatment.

Considering the above challenges in differential diagnosis we try to overcome them using machine learning. We create a knowledge base required for diagnosing the diseases and collect the patients' data such as symptoms, history, records and map it to the most possible diseases. Thus helps in diagnosing faster and narrows down the focus area.

The main methodology implemented in this project after collection and labelling of data is data pre-processing, attributes selection and finally classification of this data by KNN, ANN Back Propagation Algorithm in Machine Learning. The MLP, which is a deep learning method, uses back propagation for training the network which helps in characterizing several layers of input nodes connected as a directed graph between the input and output layers.

As an end result of the training module, we display the disease with its probability with a brief description of the disease along with the possible symptoms which may further occur. With the result of highest accuracy that is obtained in the shortest implementation time, we aspire to do a small contribution to the medical field.

ACKNOWLEDGEMENT

The satisfaction and the euphoria that accompany the successful completion of any task would be incomplete without the mention of the people who made it possible. The constant guidance of these persons and encouragement provide, crowned our efforts with success and glory. Although it is not possible to thank all the members who helped for the completion of the project individually, we take this opportunity to express our gratitude to one and all.

We are grateful to management and our institute **GLOBAL ACADEMY OF TECHNOLOGY** with its very ideals and inspiration for having provided us with the facilities, which made this, project a success.

We express our sincere gratitude to **Dr. N. Rana Pratap Reddy,** Principal, Global Academy of Technology for the support and encouragement.

We wish to place on record, our grateful thanks to **Dr. Venugeetha Y**, HOD, Department of CSE , Global Academy of Technology, for the constant encouragement provided to us.

We are indebted with a deep sense of gratitude for the constant inspiration, encouragement, timely guidance and valid suggestion given to us by our guide **Jyothi R, Assistant Professor**, Department of CSE, Global Academy of Technology.

We are thankful to all the staff members of the department for providing relevant information and helped in different capacities in carrying out this project.

Last, but not least, we owe our debts to our parents, friends and also those who directly or indirectly have helped us to make the project work a success.

Praveen V	**1GA16CS101**
Yashas C R	**1GA16CS182**
Thejasvee M	**1GA16CS195**
Sneha Surendra	**1GA16CS198**

TABLE OF CONTENTS

Sl.No	Particulars	Page. No
1.	Abstract	i
2.	Acknowledgement	ii
3.	Table of contents	iii
4.	List of Figures	vi
5.	List of Tables	vii
6.	Glossary	viii
7.	Chapter 1: Introduction	1
	1.1 Definitions	1
	1.2 Project Report Outline	2
8.	Chapter 2: Review of Literature	3
	2.1 System Study	3
	2.2 Proposed Work	3
	2.3 Scope of the project	4
9.	Chapter 3: System Requirement Specification	5
	3.1 Functional Requirements	5
	3.2 Non Functional Requirements	5
	3.3 Hardware Requirements	6
	3.4 Software Requirements	6

10. Chapter 4 : System Design 7

4.1 Design Overview 7

4.2 System Architecture 7

4.3 Data Flow Diagrams 8

4.3.1 Data Flow Diagram - Level 0 8

4.3.2 Data Flow Diagram - Level 1 9

4.3.3 Data Flow Diagram - Level 2 10

4.4 Use Case Diagram 11

4.5 Class Diagram 12

4.6 Sequence Diagram 13

4.7 Activity Diagram 14

4.8 Modules 15

4.8.1 Data Preprocessing 15

4.8.2 Training the model 15

4.8.3 Output Phase 15

Biblography 16

LIST OF FIGURES

Figure No.	Figure Name	Page. No
Figure 4.2	System Architecture	7
Figure 4.3.1	Data Flow Diagram - Level 0	8
Figure 4.3.2	Data Flow Diagram - Level 1	9
Figure 4.3.3	Data Flow Diagram - Level 2	10
Figure 4.4	Use Case Diagram	11
Figure 4.5	Class Diagram	12
Figure 4.6	Sequence Diagram	13
Figure 4.7	Activity Diagram	14

GLOSSARY

AI	Artificial Intelligence
ML	Machine Learning
MLP	Multi-Layer Perceptron
KNN	K- Nearest Neighbor
ANN	Artificial Neural Network
SRS	Software Requirement Specification
DFD	Data Flow Diagram