

# Prediction Model for H1N1 Disease

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By

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## ABSTRAK

Kajian ini menggunakan data H1N1 daripada Hong Kong yang di kumpulkan daripada pesakit dari klinik (sektor persendirian dan swasta) di seluruh Hong Kong dengan influenza yang sama. Objektif kajian ini adalah untuk membina model ramalan untuk penyakit H1N1 dengan menggunakan Multilayer Perceptron. Eperiment ini menggunakan WEKA machine learning sebagai perkakas untuk mencipta nilai parameter untuk data tersebut. General Methodology of Design Research (GMDR) and Knowledge Discovery in Databases (KDD) telah digunakan sebagai pengukur rujukan dalam kajian ini. Model ramalan untuk H1N1 menggunakan MLP telah dihasilkan dan MLP menunjukkan keputusan prestasi yang baik dengan nilai ketepatan untuk penyakit H1N1 adalah 88.57%.

**Kata kunci:** *H1N1, Multilayer Perceptron, Nilai ketepatan*

## ABSTRACT

This research has used the H1N1 disease based on the data collected from outpatient clinics (private and public sectors) across Hong Kong with influenza like illness. The objective of this project is to develop a prediction model of H1N1 disease using Multilayer Perceptron. The experiment using WEKA machine learning tool produced the best parameter's values for the datasets. The General Methodology of Design Research (GMDR) and Knowledge Discovery in Databases (KDD) has been used throughout the study as a guideline. Prediction model for H1N1 disease using MLP has been generated and MLP has performs the good result where the value of accuracy for the H1N1 disease is 88.57%.

**Keywords:** *H1N1 disease, Multilayer Perceptron, Accuracy's values*

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## TABLE OF CONTENTS

	Page
PERMISION TO USE	II
ABSTRACT (BAHASA MALAYSIA)	III
ABSTRACT (ENGLISH)	IV
ACKNOWLEDGEMENT	V
LIST OF TABLES	VIII
LIST OF FIGURES	IX
<b>CHAPTER ONE: INTRODUCTION</b>	
1.1 The Context of the Study	1
1.2 Statement of the Problem	2
1.3 Objectives of the Study	3
1.4 Significance of Study	4
1.5 Scope, Assumptions and Limitations of the Study	4
1.5.1 Scope	4
1.5.2 Assumptions of the Study	5
1.5.3 Limitations of the Study	5
1.6 Organization of the Report	6
<b>CHAPTER TWO: LITRERATURE REVIEW</b>	
2.1 Data Mining	8

2.2 Neural Network	10
2.3 Prediction in Medical	16
2.4 Influenza A (H1N1)	20
<b>CHAPTER THREE: METHODOLOGY</b>	
3.1 Introduction to WEKA Software Machine Learning Tools	26
3.2 Methodology	27
3.2.1 Awareness of Problem	29
3.2.2 Requirement Gathering	29
3.2.3 Rule Extraction	29
3.2.4 Evaluation	35
<b>CHAPTER FOUR: RESULT ANALYSIS</b>	
4.1 To determine the most suitable number of Hidden Units	37
4.2 To determine the most suitable Learning Rate	42
4.3 To determine the most suitable Momentum Rate	43
4.4 To determine the most suitable Number of Epoch	46
4.5 To determine the most suitable Percentage Split	47
4.6 The Network Architecture	48
4.7 Summary	49
<b>CHAPTER FIVE: CONCLUSIONS</b>	
5.1 Recommendation and Future Work	50
<b>REFERENCES</b>	<b>52</b>



## List of table

<b>List</b>	<b>Descriptions</b>
Table 3.2.3	Percentage of Splitting data
Table 4	Starting parameters
Table 4.1(a)	Result to determine the best number of hidden unit
Table 4.1 (b)	Result to determine the best Hidden Unit using various Weight Seed
Table 4.2	Result to determine the best Learning Rate
Table 4.3 (a)	Result to determine the best Momentum Rate
Tables 4.3 (b)	Results of using Momentum 0.1, 0.2 and 0.3 using various Weight Seeds
Table 4.4	Result to determine the best Number of Epoch
Table 4.5	Result to determine the best Split Percentage
Table 4.7	Neural Network Model and the optimum parameters

## **LIST OF FIGURE**

<b>List</b>	<b>Descriptions</b>
Figure 2.2 (a)	A Biological Neuron
Figure 2.2 (b)	An Artificial Neuron
Figure 3.1	Example of WEKA's Interface software
Figure 3.2	General Methodology of Design Research (GMDR) and KDD Process (Fayyad et al., (1996))
Figure 3.2.3 (a)	Original Data
Figure 3.2.3.b (i)	Layout of data imported to WEKA
Figure 3.2.3.b (ii)	Missing value before preprocessing data
Figure 3.2.3.g	Layout of changing parameter in WEKA
Figure 4.1	Result to determine the best Hidden Unit using various Weight Seed
Figure 4.3	Result to determine the best Momentum Rate using various Weight Seed
Figure 4.6	Neural Network Architecture

# CHAPTER 1

## INTRODUCTION

### 1.1 The Context of the Study

In the spring of 2009, a newly identified flu virus called influenza A (or H1N1) spread rapidly among people (Mabrouk & Marzouk, 2010). Based on the information from the Centers for Disease Control and Prevention (CDC), within a week, the virus spread worldwide to 30 countries by animal-to-human and human-to-human. According to the latest World Health Organization (WHO) statistics, there are more than 18,000 people died because of this virus since it was identified on April 2009. H1N1 virus has spread to enough countries to be considered as a global pandemic. Influenza epidemics can seriously affect the health of all ages particularly children younger than 2 years old and adult age 65 or older. People especially with certain medical conditions such as liver, lung, chronic heart, kidney, blood or metabolic diseases or weakened immune systems are at higher risk of being contacted with this disease.

Patients of H1N1 disease suffer because this disease is still unknown. Consequently, the determination of H1N1 or common flu would require the current model such as Multilayer Perceptron (MLP) .Our project intents to focus on the MLP model and how this model can be used to predict H1N1.

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