Please select one topic among the topics given below & prepare your project submission.

The instructions & sample research proposal format have been provided below.
Kindly check & follow the same.

Semester III - Minor Project - Software Development (2 Credits)

List of Demo Project Topics :

- Data Visualization Software
- Electricity Billing System
- Web Medical Management System
- Supply Chain Management System
- Exam Seating Arrangement System in Java
- Wordcount Tools in Java
- Create a Consumer Relationship Management System
- bFit Cognitive and Memory Testing Game
- Network Packet Sniffer Analyzer Software
- Internet Service Provider Automation System
- Create a Criminal Face Detection System

Abstract

A widespread global health concern among women is the incidence of the second most leading cause of fatality which is breast cancer. Predicting the occurrence of breast cancer based on the risk factors will pave the way to an early diagnosis and an efficient treatment in a quicker time.

Table of Contents

1. Background

The World Health Organization reported in 2018 that there were 627,000 deaths worldwide due to breast cancer (Ramachandran, Girija & Bhuvaneswari, 2014). Breast cancer is the second most common cancer death among women, especially in developing countries. This cancer type accounts for 25% of all cancers among women and affects 10% of women globally at some stage of their life (Huang et al., 2017). This is a more common issue in developing countries where the mortality rate is greater due to the prohibitive cost incurred for extensive diagnostic tests and treatments required to treat breast cancer completely.

American Cancer Society statistics exhibited that there will be about 252,710 new patients with invasive breast cancer and 63,410 patients with in situ breast carcinoma that are expected to be diagnosed among US women in 2017 (American Cancer Society, 2016).

2. Problem Statement OR Related Research OR Related Work

3. Research Questions (If any)

The following research questions are suggested for each of the research objective as highlighted as follows.

4. Aim and Objectives

The main aim of this research is to propose a ………………………………. The identification of the breast cancer ………….

The research objectives are formulated based on the aim of this study which are as follows:

- To analyze the pattern and relationship between the risk factors ………….
- To suggest a suitable balancing technique …………..
- To compare between the predictive models ……………..
- To evaluate the performance of ………………

5. Significance of the Study

6. Scope of the Study

7. Research Methodology

Methodology deployed involves key processes such as the selection of target data, pre-processing the chosen data, transforming the data into a structured and comprehensible format, balancing the dataset, implementing supervised learning techniques and evaluating the machine learning performance using evaluation measures. These steps ……………………………..

8. Requirements Resources

9. Research Plan

References

Refer: Harvard Referencing Guide

Table of Contents

Table of Contents

Note: Slide is taken from live session on Research Proposal Structure, upGrad by Dr. Manoj Jayabalan

Explore published thesis, scientific papers.(peer reviewed)

Avoid blogs and newspaper articles in systematic literature reviews

Look for Survey paper, if there is none. You have a good chance of publishing the same based on SLR. You can check out related survey papers instead.

Try to build a story line, talk about research gaps and challenges

Explore flowcharts and figures

Explain yourself: do not write something you are not confident about

Do not include generic details

You can screen papers by their abstract and if that entice you read introduction, conclusion/future recommendation as well

S. No	Year	Title	Author(s)	Dataset	Problem(s)	Purpose	Preprocessing	Algorithms	Evaluation	Summary	Remarks
											Include future recommendations

Note: Slide is taken from live session on Research Proposal Structure, upGrad by Dr. Manoj Jayabalan

Aim & Objectives - Sample

Aim and Objectives

Clear aim

The main aim of this research is to propose a model to predict the occurrence of breast cancer based on their risk factors. The identification of the breast cancer incidence using the well-studied risk factors allows for a quick and cost-effective diagnosis and the recurrence of this disease can also be predicted based on the disease model generated.

Primary goal

The research objectives are formulated based on the aim of this study, which are as follows:

Analyzing → • To analyze the pattern and relationship between the risk factors of breast cancer via visualization to improve the comprehensibility of diagnosis for clinicians and patients.

Pre-processing → • To suggest a suitable balancing technique that can be applied on the imbalanced dataset.

Models → • To compare between the predictive models to identify the most accurate model to classify breast cancer occurrence based on its risk factors.

Model evaluation → • To evaluate the performance of the classifiers based on the balancing techniques.

Note: Slide is taken from live session on Research Proposal Structure, upGrad by Dr. Manoj Jayabalan

Aim & Objectives - Sample

Aim and Objectives

Clear aim { The main aim of this research is to develop a personalised blood glucose prediction model using only non-CGM data. The goal of this research is to contribute to the vast majority of diabetic patients that do not use CGM for self-monitoring of blood glucose levels. } Primary goal

The research objectives are formulated based on the aim of this study, which are as follows:

LR ⟶ • To investigate the performance of existing blood glucose prediction models developed using non-CGM data

Model ⟶ • To develop a personalised prediction model using only non-CGM data

Model evaluation ⟶ • To evaluate the performance of the proposed blood glucose prediction model

Note: Slide is taken from live session on Research Proposal Structure, upGrad by Dr. Manoj Jayabalan

Aim & Objectives - Sample

Research Aim and Objectives

Clear aim

The aim of this research is to propose an approach to enhance the projecting capability of the Lee-Carter model and fit the model to the Mauritian mortality data from 1984 to 2018[1]. The goal of this study is to forecast the mortality rate of Mauritius and provide solutions to insurance companies and pension providers to alleviate the effects of ageing population.

Primary goal

The objectives of the research are outlined as follows.

LR ⟶ • To investigate state-of-the-art approaches to the Lee-Carter model used in modelling and forecasting mortality rate.

Pre-processing ⟶ • To determine the optimum technique to estimate the parameters of the Lee-Carter model.

Models ⟶ • To propose a deep-learning model to forecast the mortality index parameter.

Model evaluation ⟶ • To evaluate the performance of the Lee-Carter model.

Note: Slide is taken from live session on Research Proposal Structure, upGrad by Dr. Manoj Jayabalan

You need to address "HOW?"

Describe how will you address different objectives

Be consistent with the order of importance

For each objective there should be a method

For each method, cite the proper reference.

You can include following:

- Workflow
- Dataset Description
- Data Preprocessing
- Transformation/Augmentation
- Modelling Techniques
- Evaluation Metrics

Hardware Requirements

Software Requirements

Significance of the study	Scope of the study
• Reflect importance of your work • Expected outcome • National & International Implications	• In scope • Out of Scope • Reason for defining the scope

Theme of your research in brief

Set the context of the problem and hypothesis

Should develop into motivation/purpose of the study

Introduction is not a literature review but its a glimpse of the total information

Last but not least present your general objective

Research Proposal

- Introduction
- Objectives
- Methodology
- Perspective

Read abstract from scientific abstracts(observe journal rules)

Do not use reference/citations or any graphic element in abstract

Word limit 250-300 words

Be short, Concise and deep

Gantt Chart

Risk & Contingency Plans (If any)

Table caption should be above the table

Figure caption should be below the figure

Do not start a section with figure or table

Subsection should not follow Section immediately

Justify your text

Follow RP Formatting Guide

Read and Read more scientific articles

Improve Vocabulary

Literature experience

Make records

Make notes

Writing with clarity

Avoid slangs and popular idiomatic expression

Use consistence tense

Be simple

Avoid too long sentence

Avoid very long paragraphs

Refer: Writing for computer Science by Justin Zobel

S.No	Criteria	Weightage
1.	Aim & Objectives	10
2.	Background/Introduction	10
3.	Problem Statement/Related Work	15
4.	Methodology	30
5.	Expected outcomes (Significance and Scope)	5
6.	Required resources	5
7.	Plan of work	10
8.	References	5
9.	Presentation and quality of report	10