**OUTSIDE**

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**Blank Sheets:**

In addition to the white sheets (binding requirement) two white sheets shall be put at the beginningand the end of the thesis.

**DIABETIC RETINOPATHY DETECTION**

Submitted in partial fulfillment of the requirements

of the degree of

**B. E. Computer Engineering**

By

**Niral Neres Almeida 04**

**Rudolph Ignatius Almeida 05**

**Melissa Allwin D’cunha 20**

**Under the Guidance of**

Mrs. Vincy Joseph

Assistant Professor

****

Department of Computer Engineering

St. Francis Institute of Technology

(Engineering College)

University of Mumbai

2017-2018

**INSIDE**

**PAGES**

**[See General instructions for page setup & other instructions]DIABETIC RETINOPATHY DETECTION**

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**CERTIFICATE**

This is to certify that the project entitled **“Diabetic Retinopathy Detection”** is a bonafide work of **Niral Neres Almeida (Roll No.04), Rudolph Ignatius Almeida (Roll No.05), Melissa Allwin D’cunha (Roll No.20),** submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of B.E. in Computer Engineering

**Mrs. Vincy Joseph**

**Supervisor/Guide**

**Dr. Kavita Sonawane Dr. Sincy George**

**Head of Department Principal**

i

**Project Report Approval for B.E.**

This project report entitled **Diabetic Retinopathy Detection** by Niral Neres Almeida, Rudolph Ignatius Almeida, Melissa Allwin D’cunha is approved for the degree of ***B.E. in Computer Engineering.***

Examiners

1.---------------------------------------------

2.---------------------------------------------

Date:

Place:

ii

Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Niral Neres Almeida-o4

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Rudolph Almeida-o5

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Melissa Allwin D’cunha-20

Date:

iii

**Abstract**

The project aims to build a comprehensive and automated system capable of identifying the extent to which a person in suffering from diabetic retinopathy which is one of the leading causes of blindness in the world. Current DR detection methods are manual based i.e. a physician manually checks images for features inherent to DR. The system given a pair of color fundus photographs, will provide a rating between 0-4 which tells the extent to which DR occurs in the eye. The system will be trained using supervised machine learning algorithms with a dataset, which has been labelled and rated by a practicing physician. The goal is to push the automated system to the limit of what is possible – ideally resulting a model which has realistic clinical potential. The system will be a desktop based system with a user interface which allows easy uploading of images to the system, which will then classify the image.

iv

**Contents**

v

|  |  |  |
| --- | --- | --- |
| **Chapter** | **Contents** | **Page No.** |
| **1** | **INTRODUCTION:** |  |
|  | **1.1 Description** |  |
|  | **1.2 Problem Formulation** |  |
|  | **1.3 Motivation** |  |
|  | **1.3 Proposed Solution** |  |
|  | **1.4 Scope of the project** |  |
| **2** | **REVIEW OF LITERATURE** |  |
| **3** | **SYSTEM ANALYSIS** |  |
|  | **3.1Functional Requirements** |  |
|  | **3.2 Non Functional Requirements** |  |
|  | **3.3 Specific Requirements** |  |
|  | **3.4 Use-Case Diagrams and description** |  |
| **4** | **ANALYSIS MODELING** |  |
|  | **4.1Activity Diagrams** |  |
|  | **4.2Data Modeling** |  |
|  | **4.3 TimeLine Chart** |  |
| **5** | **DESIGN** |  |
|  | **5.1 Architectural Design** |  |
|  | **5.2 User Interface Design** |  |
| **6** | **IMPLEMENTATION** |  |
|  | **6.1 Algorithms / Methods Used**  Mention your algorithms if any or any methodology used. |  |
|  | **6.2 Working of the project *(code for mentioned algorithms)*** |  |
| **7** | **TESTING *(white box /black-box / any testing algorithm used)*** |  |
|  | **7.1 Test cases *(conditions on which testing is done)*** |  |
|  | **7.2 Type of Testing used *(explanation and reason of testing method used)*** |  |
| **8** | **RESULTS AND DISCUSSIONS *(final results or outputs)*** |  |
| **9** | **CONCLUSIONS&FUTURE SCOPE** |  |

Appendix

Literature Cited

Publications by your group (if any)

Acknowledgements

**List of Figures**

|  |  |  |
| --- | --- | --- |
| **Fig. No.** | **Figure Caption** | **Page No.** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

vii

**List of Tables**

|  |  |  |
| --- | --- | --- |
| **Table No.** | **Table Title** | **Page No.** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

viii

**List of Abbreviations**

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Abbreviation** | **Expanded form** |
|  | DR | Diabetic Retinopathy |
|  | CNN | Convolutional Neural Network |
|  | ANN | Artificial Neural Network |
|  | ML | Machine Learning |
|  | SVM | Support Vector Machine |
|  | RGB | Red Green Blue |
|  | DFD | Data Flow Diagram |

ix