**PROJECT TITLE PROJECT TITLE PROJECT TITLE PROJECT TITLE PROJECT TITLE**

### This project report is submitted to

### Silicon Institute of Technology, Bhubaneswar

***in partial fulfillment of the requirements for the award of the degree of***

**Bachelor of Technology**

**in**

**Computer Science and Engineering**

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**SILICON INSTITUTE OF TECHNOLOGY**

**SILICON HILLS, BHUBANESWAR – 751024, ODISHA, INDIA**

**Month, Year**

**ACKNOWLEDGEMENTS**

Write an acknowledgement for maximum of one page. The candidates should convey their appreciation to all whom have played a role for completion of this project work. The supervisor, co-supervisor (if any), head of the department, faculty members, lab mates, friends etc. may be acknowledged.

For example, I take upon this opportunity to acknowledge the many people whose …………… I am deeply indebted to my supervisor and mentor …………………. I would like to thank ……………… I further thank to ………………….

I owe my sincere gratitude towards …………………. My heartfelt thanks to ……………….. I also express my deepest gratitude to …………………. Finally, I would like to wind up by paying my heartfelt thanks ………………

## Name of the Student …………………………………...

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**SILICON INSTITUTE OF TECHNOLOGY**

## BHUBANESWAR – 751024

**ABSTRACT**

Abstract should be of around 250 words. It should be written in Times New Roman, font size 12, text justified, line spacing 1.5. Writing an effective abstract is very important and plays an important role because it demonstrates the general idea of the whole work. Abstract should highlight the project. The objectives and findings should be correlated and clear. The brief summary of the project with details of highlighting various chapters should be included in the abstract. The introduction and literature review are not required to incorporate in the abstract part of the project.

Abstract should be compacted within one or two pages of around 250 words. At the end of the abstract, eight to ten keywords should be mentioned which are separated by commas. Keywords are the important buzz words of the project.

***Keywords:*** *January, February, March, April, May, June, July, August, September.*

# LIST OF ABBREVIATIONS

(Abbreviations should be alphabetically written)

## Abbreviation Description

AIR All India Radio

BARC Bhabha Atomic Research Centre

CNTs Carbon Nanotubes

DMSO Dimethyl Sulfoxide

ETA Estimated Time of Arrival

HRTEM High Resolution Transmission Electron Microscopy

IoT Internet of Things

M. Tech Masters of Technology

OS Operating System

PVA Polyvinyl Alcohol

RMSE Root Mean Square Error

SEM Scanning Electron Microscopy

SIT Silicon Institute of Technology

XPS X-ray Photoelectron Spectroscopy

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**CHAPTER 1**

**INTRODUCTION**

The introduction chapter should contain the complete information of the project. By going through the Introduction chapter, one can have a clear understanding of the contents of other chapters. This chapter may include a discussion of the broad area of the work being carried out which is followed by the sections viz, motivation, objective, scope of the work, problem definition(s), etc. and the project organization i.e. a brief description of the contents of other chapters. Finally, each chapter should conclude with a SUMMARY of the things discussed.

* 1. **BACKGROUND**

In a conventional sense, image segmentation [5] [7] [10] is the partitioning of an image into regions, where parts within a region are similar according to some uniformity predicate, and dissimilar between neighbouring regions. Due to its importance, many segmentation algorithms have been proposed, and a number of evaluation criteria [3] have also been proposed. In spite of this, very few comparative studies on the methods used for evaluation have been published [4] [6].

Typically, researchers show their segmentation results on a few images and point out why the results ’look good’. We never know from such studies if the results are good or typical examples. Since none of the proposed segmentation algorithms are generally applicable to all images, and different algorithms are not equally suitable for a particular application, there needs to be a way of comparing them, so that the better ones can be selected. The majority of studies proposing and comparing segmentation methods evaluate the results only with one evaluation method. However, results vary significantly between different evaluators, because each evaluator may have distinct standards for measuring the quality of the segmentation. An example demonstrating the concept of image segmentation is shown in Figure 1.1. The figure shows an original image and its corresponding gray-scale segmented image.

. 

Figure 1.1. Original image and its gray scale segmented image

* 1. **PROBLEM STATEMENT**

In this project the problem of computational optimization of discovery and selection of semantic services is taken up with special focus to include disparate similarity demands of clients and to provide flexibility in querying. The statement of the problem is explicitly declared as:

*“To computationally optimize discovery and selection of semantic services considering similarity demands and flexibility in constructing queries using some alternate methods”.*

* 1. **OBJECTIVE AND MOTIVATION**

*“The objective of this project is to provide the reuse of third-party software components which are becoming popular recently”.*

Building systems based on reusable components is not a new idea. It has been proven to be a very effective cost-reduction approach in the computer hardware industry. Today, that industry is able to build computer systems based on standardized high-quality hardware parts and devices reliably and quickly. Software engineers learned the value of this idea many years ago.

We would like to introduce the issues and challenges in component testing approach:

1. *Difficult to perform component analysis and testing due to the lack of the access to component source code and internal artifacts.*
2. *Testing reused components in a new reuse context and environment.*
3. *Expensive cost of constructing component test bed, including test drivers and stubs.*

In this work we proposed a model and an algorithm to generate test cases for component composition. We take the help of UML state chart diagram and CIG for generating the test cases.

## PROPOSED METHOD

* + 1. **Method to Improve the Performance of Discovery**

It is proposed to improve the performance of discovery using two techniques, namely, clustering and indexing. These techniques achieve improved performance by eliminating the irrelevant services of a query from semantic matching. Clustering and indexing are complementary; clustering partitions services into groups of similar functional characteristics and during discovery the cluster which is most similar to the query alone will be chosen for semantic matching whereas indexing helps in retrieving services mapped by the inputs and outputs of the query as can be seen from Figure 1.2.

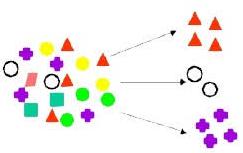


Figure 1.2. Original image and its three clusters formation by applying proposed method

* + 1. **Evaluation Parameter ─ RMSE**

RMSE [22]determines the difference in the results likely to be obtained by a model with those which are actually present in it. RMSE is given by the following equation:-

 (1.1)

A smaller value obtained for RMSE implies the image is of premium quality.

The result of K-Means [3] was tested on different data sets taken from UCI repository [2]. The different features of the datasets are shown in Table 1.1 below.

Table 1.1. Features of datasets

|  |  |  |  |
| --- | --- | --- | --- |
| **Datasets** | **No. of Attributes** | **No. of Classes** | **Instances** |
| Iris | 4 | 3 | 150 |
| Wine | 13 | 3 | 178 |
| Seed | 7 | 3 | 210 |

* 1. **PROJECT ORGANIZATION**

**Chapter 1** titled, *“Introduction”,* presents the general overview of the concept of image segmentation, techniques and applications involving it. It also contains the objective and motivation behind the work.

**Chapter 2** titled, *“Literature review”* presents the renowned works earlier performed by well-known personalities in the area of image processing. This chapter furthermore contains the positives and negatives of the existing works done.

**Chapter 3** named as, *“Proposed Method”,*

**Chapter 4** titled, *“Experimental Results”*

**Chapter 5** titled, *“Conclusion”,* is the summery of the complete work carried out with a miniature part given to the society.

**SUMMARY**

In this chapter we discussed about:

* The basic concept and goals of …
* Various applications where image segmentation plays a vital part.
* Parameters for evaluating the results like …, … and …
* Motivation, objective and domain of this work.

**CHAPTER 2**

**LITERATURE REVIEW**

A literature review is a search and evaluation of the available literature in your given subject or chosen topic area. It documents the state of the art with respect to the subject or topic you are writing about. It surveys the literature in your chosen area of study. If you have to write a dissertation, you may be required to begin by writing a literature review.

A literature review has four main objectives:

1. It surveys the literature in your chosen area of study.
2. It synthesizes the information in that literature into a summary.
3. It critically analyses the information gathered by identifying gaps in current knowledge; by showing limitations of theories and points of view; and by formulating areas for further research and reviewing areas of controversy.
4. It presents the literature in an organized way.

A literature review shows your readers that you have an in-depth grasp of your subject and that you understand where your own work fits into and adds to an existing body of agreed knowledge.

**… … …**

**… … …**

In the end, conclude the chapter by including a SUMMARY of the things discussed.

**SUMMARY**

In this chapter we discussed about:

* The basics of …
* The pros and cons of …
* The different models / techniques used by various …

**REFERENCES**

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**APPENDIX – A**

**LIST OF FORMULAS USED**

1. K-Means objective function : 

2. Root Mean Square Error : 

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