A Seminar /Project Report On

Topic Name

Submitted in partial fulfilment for the
degree of Bachelor of Technology in
Information Technology

Submitted by
Name of Student

Under the guidance of
Guide Name

Name of College
Address
Address
Year

Approval Sheet

This is to certify that Name of Student has completed the —- (Seminar/project) report on the topic " topic name" satisfactorily in partial fulfillment for the Bachelor's Degree in ———(dept) under the guidance of —-Guide Name during the year —- as prescribed by —-name of university.

Guide

Guide name

Head Of Department

HOD name

Principal
Name of Principal

Examiner 1

Examiner 2

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.

(Signature)

(Name of the student)

(Roll No)

Date

Abstract

Abstract is the brief information regarding your project. It may be in a single paragraph of in multiple paragraph, but should give the information regarding your project in minimum possible words.

Keywords: *TDM, FDM, ...*

Contents

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Nomenclature

dB	Decibel
σ_s	3 dB Bandwidth of source
3G	Third generation
4G	Fourth Generation
TDM	Time Division Multiplexing
WDM	Wavelength Division Multiplexing

Chapter 1

Introduction

Introduction should not be less that one page at least it should be one and half page. It should consists of the brief information of you project and what are the similar methods carried out. Introduction may be in the paragraphs with proper references of citation. Introduction also consists of figures which are properly captioned.

It is very important to note that there should not be any space before the comma(,) or full stop (.).

Last paragraph of the introduction should give flow of information in succeeding chapter.

1.1 Objectives of the Study

1.2 Organization of the report

Chapter 2

Review of Literature Survey

This chapter should consists the information regarding already available solutions/methods of whatever you are proposing.

Another paragraph should explain what are the problems with the solution/methods proposed by others. These methods should be properly supported by proper reference.

Chapter 3

Amplitude Modulation

Study the LaTeX code in chapt3.tex. It will help you for figure insertion, math using LaTeX . Table creation, citations, labels.

3.1 Homomorphic filter

By performing simultaneous gray level range compression and contrast enhancement on illumination reflection model,one can improve the appearance of an image by designing a frequency domain procedure Mantas [1987]. An image $f(x, y)$ can be expressed as a product of illumination and reflection components Foucher [2009].

$$f(x, y) = i(x, y)r(x, y) \tag{3.1}$$

here $i(x, y)$ is illumination component and $r(x, y)$ reflection component.

Fourier transform of the product of two functions is not separable, So we can define shown in as shown in Equation 3.2

$$F.T[z(x, y)] = F.T[lnf(x, y)] = F.T[lni(x, y)] + F.T[lnr(x, y)] \tag{3.2}$$

$$Z(u, v) = F_i(u, v) + F_r(u, v) \tag{3.3}$$

$$S(u,v) = H(u,v)Z(u,v) \tag{3.4}$$

where $S(u,v)$ Fourier Transform of result and $H(u,v)$ Filter function

$$S(u,v) = H(u,v)F_i(u,v) + H(u,v)F_r(u,v)$$

$$s(x,y) = F^{-1}[S(u,v)]$$

$$s(x,y) = F^{-1}[H(u,v)F_i(u,v)] + F^{-1}[H(u,v)F^r(u,v)]$$

Say

$$i'(x,y) = F^{-1}[H(u,v)F_i(u,v)]$$

$$r'(x,y) = F^{-1}[H(u,v)F_r(u,v)]$$

Hence,

$$s(x,y) = i'(x,y) + r'(x,y)$$

Therefore, Let $g(x,y)$ be the inverse exponential operation

$$g(x,y) = e^{s(x,y)}$$

$$g(x,y) = e^{i'(x,y)}e^{r'(x,y)}$$

$$g(x,y) = i_0(x,y) + r_0(x,y)$$

where $i_0(x,y) = e^{i'(x,y)}$ and $r_0(x,y) = e^{r'(x,y)}$

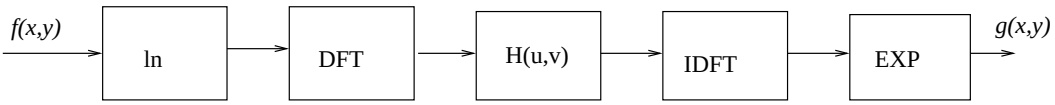

Figure 3.1: Block digram

- This approach is used for homomorphic filtering as shown in figure 3.1. The key to the approach is separation of the illumination and reflection components. Between them $i(x, y)$ contributes to the low frequency since illumination is more or less uniform and $r(x, y)$ is high frequency component as it tends to vary abruptly at junctions of dissimilar objects.

- $H(u, v)$ is the homomorphic filtering function.A typical homomorphic filter $H(u, v)$ is as shown in figure below. Generally, $\gamma_L < 1$ and$\gamma_H > 1$, $H(u, v)$ tends to decrease the contribution made by low frequencies and amplify the contribution made by high frequency.

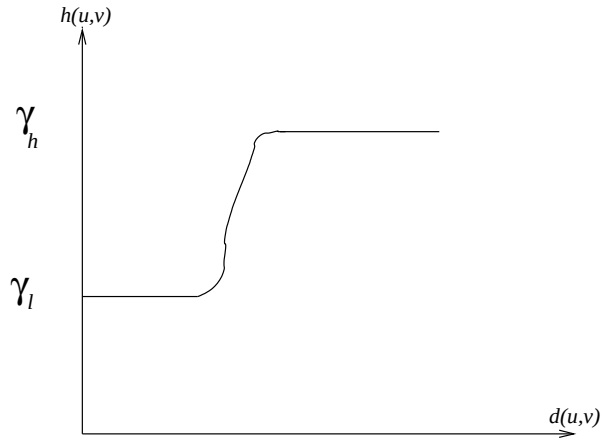

Figure 3.2: Transfer function

3.2 Morphological Filters

To understand morphological filters we first need to understand the operations dilation, erosion,opening and closing.

3.2.1 Dilation

With A and B as sets in Z^2,the dilation of A and B denoted as $A \oplus B$ is defined as

$$A \oplus B = Z/(\hat{B}_z \cap A \neq \phi$$

Equation obtained by reflection of B about origin and shifting reflection by z . B and A should overlap by at least one element.Set B is the structuring element in all morphological operations.

Erosion For sets A and B in Z^2,the erosion of A by B denoted as $A \ominus B$ is defined as

$$A \ominus B = Z/(B_z \subseteq A)$$

This equation indicates that the erosion of A by B is the set of all points z such that B,translated by z is contained in A Erosion shrinks an image.

3.2.2 Opening and closing

Opening smooths the contour of an object. Closing also tends to smooth sections of contours but it generally fuses narrow breaks and long thin gulfs,eliminates small holes and fills gaps in contour. Opening is denoted by $A \circ B$

$$A \circ B = (A \ominus B) \oplus B$$

i.e. Erosion followed by dilation Closing is denoted by $A \bullet B$

$$A \bullet B = (A \oplus B) \ominus B$$

i.e Dilation followed by erosion. Morphological operations can be used to construct filters.

1. Suppose we have a binary image which is corrupted by noise.The noise manifests itself as light elements on a dark background and dark elements on light components of image .

2. A morphological filter consisting of opening followed by closing operation eliminates the noise and its effect on the image while distorting it as little as possible.

3. The steps are as follows

   - We have a structuring element
   - We erode A with the structuring element.The background noise gets eliminated in the erosion stage of opening because in this case all noise components are physically smaller then the structuring element. For e.g. in some images the size of the noise elements actually increases.This is because these elements are inner boundaries that should increase in size as object is eroded.
   - This enlargement is countered by performing dilation.The noise components in the image are reduced in size or deleted completely. The two operations constitute "opening" A by B.
   - Net effect of opening is to eliminate all noise components in both the background and image itself.However,new gaps may be formed.
   - To counter this effect we perform dilation on the opening.Sometimes most breaks are restored but ridges are thickened. This thickening is countered by erosion.
   - The above two steps are the closing operation.

Hence the final result is remarkably clean of noise specs. Disadvantage of this filter is that some of the point ridges might not be fully repaired and can contain breaks.

The Table 3.1 is used to explain how table can be created in Latex and also observe how table in the document can be referred in text.

Roll No	Name of the student	marks
1	Sonal	95
2	Komal	97

Table 3.1: list of students

Refer the S.S.Shitole [2011] for the different LaTeX templates.
The system Shitole [2013] is very good.

Chapter 4

Realisation/Implementation of the proposed (name of the system) system

This chapter should consists of minute details of the design and development of the project supported by diagrams and design details. Same chapter should also consists of the testing if any necessary and results taken of any data.

Chapter 5

Conclusion and Future scope

Should consists of two paragraph one regarding conclusion may from theory point of view or from experimentation point of view.

Other paragraph should explain any task not completed due to some reasons and how it can be completed in future or some modifications in the system to improve the performance.

Appendix A

Important Terms

To compare quantitatively ..... techniques, following a set of criteria are established to ...

Appendix B

Maths

.....

References

Samuel Foucher. An evaluation of PolSAR speckle filters. In *IGARSS*, 2009.

J. Mantas. Methodologies in pattern recognition and image analysis-a brief survey. *Pattern Recognition*, 1987.

Sanajy Shitole. Intelligent sytems. *UMIT*, 2013.

S.S.Shitole, 2011. `http://www.SanjayShitole.ac.in`.

Acknowledgement

I have a great pleasure to express my gratitude to all those who have contributed and motivated during my project work. Here you have a liberty to write anything and express your feeling to all those who have helped you.

...

Date:

Name of Candidate