

# Digital Image Processing

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# Contents

<b>1</b>	<b>Introduction</b>	<b>v</b>
1.1	Overview . . . . .	v
1.2	What is Digital Image Processing . . . . .	v
1.3	First photograph in the world . . . . .	v



# Chapter 1

## Introduction

### 1.1 Overview

Digital Image Processing is handling or Manipulation of digital images by computer.

Image processing include changing the nature of an image in order to : Improve its pictorial information for human interpretation and Render it more suitable for independent machine perception.

### 1.2 What is Digital Image Processing

Image : multidimensional function  $f(x,y)$  of spatial coordinates.

Spatial coordinate:  $(x,y)$  for 2D  $(x,y,z)$  for 3D  $(x,y,t)$  for movies

We call the image as a digital image When  $(x,y)$  and the amplitude values of  $f$  are all finite "discrete quantities" .

Digital image processing : Processing of digital images on a digital computer.

### 1.3 First photograph in the world