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# Chapter 1

## Background Research

### 1.1 What is computer vision?

Computer vision (CV) is a scientific discipline that studies how computer scan efficiently perceive, process, and understand information from visual data such as images and videos.

As humans, we can classify three-dimensional objects with ease, whether the pictures are the same object with different colours or angles, we are good at determining the object we are classifying. Computer vision has been developed to detect edges from a pixelated image, face detection, and has been used to develop 3D models from a snapshot yet the technology we have today could be compared to a young child's biological vision.

Computer vision is used in various real world application such as medical imaging, where people are now able to utilize magnetic resonance imaging (MRI) to safely analysis the heart wall motion where the end product is a 3d model of the heart.

### 1.2 Deep learning

Deep learning uses artificial intelligence (AI) to simulate the human brain

#### 1.2.1 Neural networks

#### 1.2.2 Convolutional neural networks