Notes from Digital Image Processing

1.Computer vision can be characterized as-low level, mid-level,and high level(for semantics and classification)

2.Human Vision-Rods and cones-Three types of cones sensitive to different light. The visual cortex serves as a vision processing substructure

3.Primary colors can be manipulated,obtaining a match to any color(Wright and Guild exp).

4.Colorspaces-RGB, HSV(represents the way humans perceive color).Images are defined as projection of the 3D world onto 2D space.
-Images are stored as pixels
-Range (0(OFF/Black)-255(ON/White))
-An RGB image is represented in the form of a tensor.

5.Images are represented as function.Interpolation enables the creation of smooth, accurate images.
eg:Bilinear interpolation- where pixels on grid box are weighted against area of rectangle to calculate value of point inside the box
-Interpolation helps in resizing and shrinking images.

Types of healthcare reports and medical imaging reports

Healthcare reports are detailed documents providing information on patients health status , medical history and examination findings.Widely characterised as -

Foundational Reports(for Diagnosis and Assessment)

Laboratory Reports-created by laboratory technicians contains information as numerical values about blood counts ,chemical levels and overall health.

Radiology Reports-Detailed description of what's seen in MRI,X-ray CT scans.

Pathology Reports-Created when pathologist examines tissue, serve as definitive source in diagnosis of cancer and various grades of tumor.

Other key reports-
1.History and Physical Report
2.Consultation Report
3.Operative Report (created by surgeon ,documents the surgical procedure, including the technique used, any complications, and post-operative instructions.)
4.Discharge Summary

Medical Imaging (Radiology Report)-

It is a detailed report containing information about the imaging test done , what techniques were used ,brief history of the person having the test and why the test was necessary.

Sections-
Exam Type
Patients clinical history
Studies used for comparison
Clinical findings of Imaging study

It is non-invasive and uses complex visual data to provide actionable medical-information helping in transforming patient care. It utilizes visual representation of tissues and organs to detect normal and abnormal anatomy and physiology.
Various Medical Imaging Techniques-
X-ray
computed tomography (CT)
positron emission tomography (PET)
magnetic resonance imaging (MRI)
single-photon emission computed tomography (SPECT)
Digital mammography, and diagnostic sonography