How I comprehend MV & CV:

- Machine Vision is a technology using machine system to implement measurement and judgment instead of people's eyes. The job of machine vision system is to grasp images by cameras and send them to processing module, which would do digital some processing on acquired images and then judgment module will measure and evaluate product's shape, color, size and give an ultimate result. MV is mainly applied production lines in factories and industries, focusing on quality inspections which aims to detect flaws and remove defective productions.
- Computer vision is a field of artificial intelligence that trains computers to interpret and understand the visual world. It mainly focuses on generating cutting edge algorithms which would benefit image processing. The involving fields of CV is more various, not only of detecting products. For example, in recent years, researches on human detection, face recognition has become heat topics.

These two subjects have overlapped research content, but they also have their own distinctive characters.

- Relationship between MV & CV:

  They both involve the ingestion and interpretation of visual inputs. We could think of machine vision as the body of a system, computer vision is the retina, optic nerve, brain and central nervous system. A machine vision system uses a camera to view an image, computer vision algorithms then process and interpret the image, before instructing other components in the system to act upon that data.

- Differences between MV & CV:
  - Application fields: CV is broader than MV.
  - Goals: MV mainly aims to automatically grasp image and perform analysis sometimes with rudimentary processing, while CV tries to create complex algorithms of image processing.
  - Focus: MV is more industrial and practical, while CV is more academic and theoretical.

References
[1] Steger C, Ulrich M, Wiedemann C. Machine vision algorithms and applications[M]. John Wiley & Sons, 2018.
[2] Szeliski R. Computer vision: algorithms and applications[M]. Springer Science & Business Media, 2010.