

Understanding Computer Vision Basics

Chapter 4: Computer Vision Basics · Topic 1

Key Concept

Computer vision systems process images by analysing pixels, identifying shapes, colours, and patterns to recognise objects, faces, or scenes.

Common applications of computer vision include facial recognition for unlocking phones, self-driving cars detecting obstacles, and medical imaging analysis to detect diseases.

Training computer vision systems requires large datasets of labelled images, teaching the AI to recognise patterns through repeated exposure to examples.

While powerful, computer vision has limitations, like difficulty recognising objects in poor lighting or unusual angles, and it must be carefully tested to avoid errors.

Quick Revision Notes

- Computer vision helps computers interpret visual information.
- It analyses pixels, shapes, colours and patterns.
- Applications include facial recognition and self-driving cars.
- Medical imaging analysis also uses computer vision.
- Training requires large datasets of labelled images.
- AI learns patterns through repeated exposure to examples.
- Computer vision has limitations, like poor lighting issues.
- Careful testing helps avoid computer vision errors.

Practice Questions

- 1 Discuss an app on your phone that uses computer vision (like facial unlock).
- 2 Research how self-driving cars use computer vision.
- 3 Explain why large datasets are needed to train computer vision.
- 4 Discuss a limitation of computer vision systems.
- 5 Research how medical imaging uses computer vision.
- 6 Discuss why testing computer vision systems is important.