**Lesson 2: Reading, Displaying, and Saving Images**

**📥 Reading an image from file:**

image = cv2.imread('cat.jpg')

**🖼 Displaying the image in a window:**

cv2.imshow('Cat', image)

cv2.waitKey(0) # Waits until a key is pressed

cv2.destroyAllWindows()

**💾 Saving the image after modification:**

cv2.imwrite('cat\_gray.jpg', image)

**⚠️ Handling errors: imread returns None if the file doesn't exist.**

**📏 Understanding image structure**

* Images are NumPy arrays!
* Shape: (height, width, channels)
* Color channels in OpenCV are in BGR order, not RGB.