OpenCV User Guide

v2.2

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Part I

C++ API Reference

Chapter 1

cv::Mat. Basic operations with images.

1.1 Basic operations with images

Input/Output

Load an image from a file:

```
Mat img = imread(filename);
```

If you read a jpg file, a 3 channel image is created by default. If you need a grayscale image, use:

```
Mat img = imread(filename, 0);
```

Save an image to a file:

```
Mat img = imwrite(filename);
```

Accessing pixel intensity values

In order to get pixel intensity value, you have to know the type of an image and the number of channels. Here is an example for a single channel grey scale image (type 8UC1) and pixel coordinates x and y:

```
Scalar intensity = img.at<uchar>(x, y);
```

`intensity.val[0]` contains a value from 0 to 255.

Now let us consider a 3 channel image with bgr color ordering (the default format returned by imread):

```
Scalar intensity = img.at<uchar>(x, y);
uchar blue = intensity.val[0];
```

```
uchar green = intensity.val[1];
uchar red = intensity.val[2];
```