简介

OPENCV

内容

- ▶ 简介

- ▶ 安装

- ▶ 应用

- ▶ JavaCV

简介

▸ OpenCV是一个用于图像处理、分析、机器视觉方面的开源函数库

▸ BSD-licensed，完全免费，包括商业应用

▸ 采用C及C++语言编写，可以在windows, linux, mac OSX系统上面运行

▸ 包含了横跨工业产品检测、医学图像处理、安防、用户界面、摄像头标定、三维成像、机器视觉等领域的超过500个接口函数

一个典型的计算机视觉算法，一般包含以下一些步骤

▶ (1)数据获取：对OpenCV来说，就是图片

▶ (2)预处理：去除或者降低噪声，光照归一化，亮度归一化，模糊化，锐化，膨胀，腐蚀、开闭等

▶ (3)特征提取：模式识别

▶ (4)特征选择：OpenCV并没有提供特定的函数来进行衡量

▶ (5)分类器设计与训练：SVM,CART,boost,bayes,bdt,ANN

▶ (6)分类判别

安装

- 源码编译

  - 1.安装CMake

  - 2. 编译OpenCV

  - 3. 使用Eclipse进行OpenCV项目开发

- homebrew安装

  - brew install opencv3 --HEAD --with-contrib

应用

▶ 图像载入、叠加与混合

▶ 分离颜色通道、多通道混合

▶ 线性邻域滤波："方框滤波"，"均值滤波"和"高斯滤波"；非线性滤波："中值滤波"和"双边滤波"

▶ 形态学处理

▶ 霍夫变换

▶ 图像金字塔

▶ 边缘检测、角点检测、特征点检测

JAVA CV

▸ https://github.com/bytedeco/javacv

▸ JavaCV uses wrappers from the JavaCPP Presets of commonly used libraries by researchers in the field of computer vision (OpenCV, FFmpeg, libdc1394, PGR FlyCapture, OpenKinect, CL PS3 Eye Driver, videoInput, ARToolKitPlus, and flandmark), and provides utility classes to make their functionality easier to use on the Java platform, including Android.

参考资料

▸ Develop with OpenCV on Mac http://hujiaweibujidao.github.io/blog/2014/03/13/develop-with-opencv-on-mac-os-x/

▸ OpenCV 教程 http://blog.csdn.net/column/details/opencv-tutorial.html

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