codecentric

OpenCV 3.* Cheat Sheet for Python 3.*

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Read, save, display images

img = cv2.imread('path', flag)	reads image from path (flag: cv2.IMREAD_COLOR, cv2.IMREAD_GRAYSCALE, cv2.IMREAD_UNCHANGED)
cv2.imshow('name of window', img)	displays image in named window
cv2.imwrite('path', img)	saves image to path

Basic image manipulation

img.shape	returns number of rows columns and channels
img.size	total number of pixels
img.dtype	datatype of image
img2 = cv2.resize(img, None, fx, fy, interpolation)	rescale img (fx, fy: scaling in x and y; interpolation: cv2.INTER_AREA for shrinking, cv2.INTER_CUBIC and cv2.INTER_LINEAR for zooming)
img.item(y,x,i)	value of channel i of pixel x,y
img.itemset((y,x,i),val)	set channel i of pixel x,y to val
img[y min:y max, x min:x max]	select region of interest in image
img2 = cv2.copyMakeBorder(img, top, bottom, left, right, borderType)	add border to img
cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)	convert between colorspaces (flag: cv2.COLOR_BGR2GRAY, cv2.COLOR_BGR2HSV,...)

Warp images

img2 = cv2.warpAffine(img, U, (columns,rows))	affine transformation of img by 2x3 matrix U
U = cv2.getRotationMatrix2D((x,y),theta,scale)	get transf. matrix U from center (x,y), angle theta, and scale
U = cv2.getAffineTransform(orig_points, trans_points)	get transf. matrix U from set of three points in orig. and transf. image
img2 = cv2.warpPerspective(img, V, (columns,rows))	perspective transformation of img by 3x3 matrix V
V = cv2.getPerspectiveTransform(orig_points, trans_points)	get transf. matrix V from set of four points in orig. and transf. image