12.1

Gradient Vector:应用于edge detection和feature extraction。（不受光照影响，亮度的变化不改变Gradient的值--"lighting invariance"）

Normalizing Gradient Vectors： gradient vectors / magnitude

public:

enum { L2Hys=0 };

enum { DEFAULT\_NLEVELS=64 };

Size winSize;

Size blockSize;

Size blockStride;

Size cellSize;

int nbins;

int derivAperture;

double winSigma;

int histogramNormType;

double L2HysThreshold;

bool gammaCorrection;

vector<float> svmDetector;

int nlevels;

HOGDescriptor();

virtual ~HOGDescriptor() {}

size\_t getDescriptorSize() const;

bool checkDetectorSize() const;

double getWinSigma() const;

virtual void setSVMDetector(InputArray \_svmdetector);

virtual void compute(const Mat& img,

CV\_OUT vector<float>& descriptors,

Size winStride=Size(), Size padding=Size(),

const vector<Point>& locations=vector<Point>()) const;

//with found weights output

virtual void detect(const Mat& img, CV\_OUT vector<Point>& foundLocations,

CV\_OUT vector<double>& weights,

double hitThreshold=0, Size winStride=Size(),

Size padding=Size(),

const vector<Point>& searchLocations=vector<Point>()) const;

//without found weights output

virtual void detect(const Mat& img, CV\_OUT vector<Point>& foundLocations,

double hitThreshold=0, Size winStride=Size(),

Size padding=Size(),

const vector<Point>& searchLocations=vector<Point>()) const;

//without found weights output

virtual void detectMultiScale(const Mat& img, CV\_OUT vector<Rect>& foundLocations,

double hitThreshold=0, Size winStride=Size(),

Size padding=Size(), double scale=1.05,

double finalThreshold=2.0, bool useMeanshiftGrouping = false) const;

virtual void computeGradient(const Mat& img, CV\_OUT Mat& grad, CV\_OUT Mat& angleOfs, Size paddingTL=Size(), Size paddingBR=Size()) const;

static vector<float> getDefaultPeopleDetector();

static vector<float> getDaimlerPeopleDetector();