

# Glossary of Acronyms and Abbreviations

1-D	one dimension/one-dimensional
2-D	two dimensions/two-dimensional
3-D	three dimensions/three-dimensional
3DPO	3-D part orientation system
ACM	Association for Computing Machinery (USA)
ADAS	advanced driver assistance system
ADC	analog to digital converter
AI	artificial intelligence
ANN	artificial neural network
APF	auxiliary particle filter
ASCII	American Standard Code for Information Interchange
ASIC	application-specific integrated circuit
ATM	automated teller machine
AUC	area under curve
AVI	audio video interleave
BCVM	between-class variance method
BetaSAC	beta [distribution] sampling consensus
BMVA	British Machine Vision Association
BRAM	block of RAM
BRDF	bidirectional reflectance distribution function
CAD	computed-aided design
CAM	computer-aided manufacture
CCD	charge-coupled device
CCTV	closed-circuit television
CDF	cumulative distribution function
CIM	computer integrated manufacture
CLIP	cellular logic image processor
CPU	central processing unit
DCSM	distinct class based splitting measure
DET	Beaudet determinant operator
DEXA	dual-emission X-ray absorptiometry
DG	differential gradient
DN	Dreschler–Nagel corner detector
DoF	degree of freedom
DoG	difference of Gaussians
DSP	digital signal processor
EM	expectation maximization
EURASIP	European Association for Signal Processing
FAST	features from accelerated segment test
FFT	fast Fourier transform

FN	false negative
<i>fnr</i>	false negative rate
FoE	focus of expansion
FoV	field of view
FP	false positive
FPGA	field programmable gate array
FPP	full perspective projection
<i>fpr</i>	false positive rate
GHT	generalized Hough transform
GLOH	gradient location and orientation histogram
GMM	Gaussian mixture model
GPS	global positioning system
GPU	graphics processing unit
GroupSAC	group sampling consensus
GVM	global valley method
HOG	histogram of orientated gradients
HSI	hue, saturation, intensity
HT	Hough transform
IBR	intensity extrema-based region detector
IDD	integrated directional derivative
IEE	Institution of Electrical Engineers (UK)
IEEE	Institute of Electrical and Electronics Engineers (USA)
IET	Institution of Engineering and Technology (UK)
ILW	iterated likelihood weighting
IMechE	Institution of Mechanical Engineers (UK)
IMPSAC	importance sampling consensus
ISODATA	iterative self-organizing data analysis
JPEG/JPG	Joint Photographic Experts Group
<i>k</i> -NN	<i>k</i> -nearest neighbor
KR	Kitchen–Rosenfeld corner detector
LED	light emitting diode
LFF	local-feature-focus method
LIDAR	light detection and ranging
LMedS	least median of squares
LoG	Laplacian of Gaussian
LS	least squares
LUT	lookup table
MAP	maximum a posteriori
MDL	minimum description length
MIMD	multiple instruction stream, multiple data stream
MIPS	millions of instructions per second
MISD	multiple instruction stream, single data stream
MLP	multi-layer perceptron

MoG	mixture of Gaussians
MP	microprocessor
MSER	maximally stable extremal region
NAPSAC	$n$ adjacent points sample consensus
NIR	near infra-red
NN	nearest neighbor
OCR	optical character recognition
PC	personal computer
PCA	principal components analysis
PCB	printed circuit board
PE	processing element
$P_nP$	perspective $n$ -point
PR	pattern recognition
PROSAC	progressive sample consensus
PSF	point spread function
RAM	random access memory
RANSAC	random sample consensus
RGB	red, green, blue
RHT	randomized Hough transform
RKHS	reproducible kernel Hilbert space
RMS	root mean square
ROC	receiver operating characteristic
RoI	region of interest
RPS	Royal Photographic Society (UK)
SFOP	scale-invariant feature operator
SIAM	Society of Industrial and Applicative Mathematics
SIFT	scale-invariant feature transform
SIMD	single instruction stream, multiple data stream
SIR	sampling importance resampling
SIS	sequential importance sampling
SISD	single instruction stream, single data stream
SOC	sorting optimization curve
SOM	self-organizing map
SPIE	Society of Photo-optical Instrumentation Engineers
SPR	statistical pattern recognition
STA	spatiotemporal attention [neural network]
SURF	speeded-up robust features
SUSAN	smallest univalue segment assimilating nucleus
SVM	support vector machine
TM	template matching
TMF	truncated median filter
TN	true negative
<i>tnr</i>	true negative rate

TP	true positive
<i>tpr</i>	true positive rate
TV	television
ULUT	universal lookup table
USEF	unit step edge function
VLSI	very large scale integration
VMF	vector median filter
VP	vanishing point
WPP	weak perspective projection
ZH	Zuniga–Haralick corner detector