Table 1: List of SLAM / VO algorithms

Name	**Refs**	**Code**	**Sensors**	**Notes**
AprilSLAM	[1] (2016) [2] (2011)	Link	Monocular	Uses 2D planar markers
ARM SLAM	[3] (2016)	-	RGB-D	Estimation of robot joint angles
BatSLAM	[4] (2015) [5] (2013)	-	Sonar	Uses RatSLAM as back-end
BundleFusion	[6] (2011)	Link	RGB-D	Focus on 3D-scanning
Cartographer	-	Link	LIDAR	2D and 3D across multiple platforms
CD SLAM	[7] (2011) [8] (2010)	-	Monocular	Focus on dynamic environments Custom descriptor
C-KLAM	[9] (2014)	-	Monocular, IMU	Usage of inter-keyframe information
CNN-SLAM	[10] (2017)	-	Monocular	Depth prediction via CNN
COP SLAM	[11] (2015) [12] (2013) [13] (2010)	-	- (back-end)	Sparse pose-graph Scale drift aware (Lie groups)
CoSLAM	[14] (2013)	Link	Multiple cameras	Dynamic environments
DEMO	[15] (2014)	-	Monocular,	Usage of depth in odometry

			RGB-D, LIDAR	
DolphinSLAM	[16] (2016) [17] (2015)	Link	Monocular, IMU Sonar, DVL	Underwater (RatSLAM back-end) ROS implementation
DP SLAM	[18] (2004) [19] (2003)	Link	LIDAR	Particle filter back-end
DPPTAM	[20] (2015)	Link	Monocular	Dense, estimates planar areas
DSO	[21] (2016)	Link	Monocular	Semi-dense odometry Estimates camera parameters
DT SLAM	[22] (2014)	Link	Monocular	Tracks 2D and 3D features (indirect) Creates combinable submaps Can track pure rotation
DTAM	[23] (2011)	Link	Monocular	Dense, GPU reliant Robust to rapid motion
DVO	[24] (2013)	Link	RGB-D	Entropy based method for loops
DynaSLAM	[25] (2018)	Link	Monocular, Stereo,	Detecting moving objects using multi-view geometry and CNN
EIF SLAM	[26] (2015) [27] (2014) [28] (2012) [29] (2011) [30] (2011)	-	- (back-end)	

	[31] (2008)			
EKF SLAM	[32] (2008) [33] (2006) [34] (2006) [35] (2004) [36] (2002)	-	- (back-end)	
ElasticFusion	[37] (2015)	Link	RGB-D	Windowed surfel-based fusion
FAB-MAP	[38] (2012) [39] (2010) [40] (2010) [41] (2009) [42] (2008)	Link	- (back-end)	Appearance-based loop closure detection
FastSLAM	[43] (2014) [44] (2013) [28] (2012) [45] (2004) [46] (2003) [47] (2002)	Link	- (back-end)	
FrameSLAM	[48] (2008)	-	Stereo	CenSure features
GDVO	[49] (2017)	Link	Stereo	Dense Dual Jacobian scheme
GPSLAM	[50] (2011)	-	RGB-D	Sparse map, dense occupancy grid
GP-SLAM	[51] (2017)	Link		Sparse gaussian process regression

	[52] (2017)			for Lie groups
Graph SLAM	[53] (2010) [54] (2006) [55] (2006)	-	- (back-end)	
Hector SLAM	[56] (2011)	Link	LIDAR, IMU	ROS implementation No loop detection
KinectFusion	[57] (2012) [58] (2011) [59] (2011)	Link	RGB-D	Object segmentation Uses only depth sensor GPU reliant
Kintinious	[60] (2013) [61] (2013) [62] (2012)	Link	RGB-D	Extension of KinectFusion
LOAM	[63] (2015)	Link A-LOAM	LIDAR	
LSD-SLAM	[64] (2015) [65] (2014) [66] (2013)	Link	Monocular, Stereo	Semi-dense Runs on CPU
Maplab	[67] (2018) [68] (2017) [69] (2015)	Link Related researches	Monocular + IMU	An open visual-inertial mapping framework.
MonoSLAM	[70] (2014) [71] (2007)	Link	Monocular	Particle filter back-end

MR SLAM	[72] (2016) [73] (2013) [74] (2006) [75] (2006) [76] (2003)	-	Multiple robots/ sensors	
NID SLAM	[77] (2017)	-	Monocular	Robust to lighting and weather GPU reliant
NI-SLAM	[78] (2017)	Dataset	RGB-D + IMU	Novel non-iterative approaches
OKVIS	[79] (2015) [80] (2014) [81] (2013)	Link	Stereo IMU	Focus on IMU integration
ORB-SLAM2	[82] (2017) [83] (2016) [84] (2015) [85] (2014)	Original CUDA-enhanced	Monocular, Stereo (v2), RGB-D (v2)	ORB descriptor Runs on CPU Extension of PTAM
Pop-up SLAM	[86] (2016)	Link	Monocular	CNN predicts planar surfaces
PTAM	[87] (2007)	Link	Monocular	Parallel tracking and mapping
RatSLAM	[88] (2013) [89] (2009) [90] (2008) [91] (2006) [92] (2005) [93] (2004)	Link	- (back-end)	Map and pose estimation based on a competitive attractor network, inspired by rat's brains

RD SLAM	[94] (2013)	-	Monocular	Focus on dynamic environments
REBVO	[95] (2016)	Link	Monocular, IMU	Odometry on edges
REMODE	[96] (2014)	Link	Monocular	Dense GPU reliant
RFM SLAM	[97] (2016)	Link	- (back-end)	Relative feature measurements Reduced complexity
RGB-D SLAM	[98] (2012) [99] (2012)	Link	RGB-D	
RKSLAM	[100] (2016)	Link	Monocular, IMU	Robust to fast motion and rotation
ROCC	[101] (2017) [102] (2016) [103] (2016)	-	Monocular, Stereo	Decouples rotation and translation Feature outlier removal Focus on automotive
ROVIO	[104] (2014)	Link	Monocular, IMU	Focus on IMU integration Relative representation
RSLAM	[105] (2011)	-	Stereo	Relative representation No global optimization
ScaViSLAM	[106] (2011)	Link	Stereo	Scale drift aware through using Lie groups
SEIF SLAM	[107] (2014)	-	- (back-end)	

	[108] (2007)			
SeqSLAM	[109] (2017) [110] (2017) [111] (2013) [112] (2012)	Link Link	- (back-end)	Loop detection through image sequences Robust to extreme changes
SLAM++	[113] (2013)	-	RGB-D	Uses KinectFusion Real-time object recognition
SlamDunk	[114] (2015)	Link	RGB-D	Runs on CPU
SOFT	[115] (2015)	-	Stereo, IMU	Odometry based on feature selection Separates rotation and translation
S-PTAM	[116] (2017) [117] (2015)	Link	Stereo	Robust to lighting changes feature-based, BRISK descriptor
SVO	[118] (2017) [119] (2014)	SVO SVO 2.0	Monocular	Focus on runtime (embedded devices) Needs a high framerate
UKF SLAM	[120] (2015) [121] (2014) [122] (2009)	-	- (back-end)	
V-LOAM	[123] (2015)	-	Monocular, LIDAR	Combination of camera and LIDAR
VINS-Mono	[124] (2018)	Link	Monocular + IMU	High accuracy, high CPU costs
VINS-Fusion	[125] (2018)	Link	Vision (Mono, Stereo) and IMU	Back-end is VINS-Mono Support GPS

vSLAM	[126] (2005)	Link	LRF	Robustness to changes Combination of particle and Kalman filter in back-end

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