

Table 1: List of SLAM / VO algorithms

| Name | Refs | Code | Sensors | Notes |
|---------------------|--|------|-------------------|---|
| AprilSLAM | [Wang2016] (2016) [Olson2011] (2011) | Link | Monocular | Uses 2D planar markers |
| ARM SLAM | [Klingensmith2016] (2016) | - | RGB-D | Estimation of robot joint angles |
| BundleFusion | [Dai2017] (2011) | Link | RGB-D | Focus on 3D-scanning |
| CD SLAM | [Pirker2011] (2011) [Pirker2010] (2010) | - | Monocular | Focus on dynamic environments Custom descriptor |
| C-KLAM | [Nerurkar2014] (2014) | - | Monocular, IMU | Usage of inter-keyframe information |
| CNN SLAM | [Tateno2017] (2017) | - | Monocular | Depth prediction via CNN |
| COP SLAM | [Dubbelman2015] (2015) [Dubbelman2013] (2013) [Dubbelman2010] (2010) | - | - (back-end) | Sparse pose-graph Scale drift aware (Lie groups) |
| CoSLAM | [Zou2013] (2013) | Link | Multiple cameras | Dynamic environments |
| DPPTAM | [Concha2015b] (2015) | Link | Monocular | Dense, estimates planar areas |
| DSO | [Engel2016] (2016) | Link | Monocular | Semi-dense odometry Estimates camera parameters |
| DT SLAM | [Daniel2014] (2014) | Link | Monocular | Tracks 2D and 3D features (indirect) Creates combinable submaps Can track pure rotation |
| DTAM | [Newcombe2011] (2011) | Link | Monocular | Dense, GPU reliant Robust to rapid motion |
| DVO | [Kerl2013] (2013) | Link | RGB-D | Entropy based method for loops |
| FrameSLAM | [Konolige2008] (2008) | - | Stereo | CenSure features |
| GDVO | [Zhu2017] (2017) | Link | Stereo | Dense Dual Jacobian scheme |
| GPSLAM | [Pirker2011a] (2011) | - | RGB-D | Sparse map, dense occupancy grid |
| GP-SLAM | [Yan2017] (2017) [Dong2017] (2017) | Link | | Sparse gaussian process regression for Lie groups |

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|---------------------|---|------|--|--|
| KinectFusion | [Pirovano2012] (2012) [Izadi2011] (2011) [Newcombe2011a] (2011) | Link | RGB-D | Object segmentation Uses only depth sensor GPU reliant |
| Kintinious | [Whelan2013a] (2013) [Whelan2013] (2013) [Whelan2012] (2012) | Link | RGB-D | Extension of KinectFusion |
| LSD SLAM | [Engel2015] (2015) [Engel2014] (2014) [Engel2013] (2013) | Link | Monocular, Stereo | Semi-dense Runs on CPU |
| MonoSLAM | [Russo2014] (2014) [Davison2007] (2007) | Link | Monocular | Particle filter back-end |
| NID SLAM | [Pascoe2017] (2017) | - | Monocular | Robust to lighting and weather GPU reliant |
| OKVIS | [Leutenegger2015] (2015) [Leutenegger2014] (2014) [Leutenegger2013] (2013) | Link | Stereo IMU | Focus on IMU integration |
| ORB SLAM | [Mur-Artal2017] (2017) [Mur-Artal2016a] (2016) [Mur-Artal2015] (2015) [Mur-Artal2014] (2014) | Link | Monocular, Stereo (v2), RGB-D (v2) | ORB descriptor Runs on CPU Extension of PTAM |
| Pop-up SLAM | [Yang2016] (2016) | Link | Monocular | CNN predicts planar surfaces |
| PTAM | [Klein2007] (2007) | Link | Monocular | Parallel tracking and mapping |
| RD SLAM | [Tan2013a] (2013) | - | Monocular | Focus on dynamic environments |
| REBVO | [Tarrio2016] (2016) | Link | Monocular, IMU | Odometry on edges |
| REMODE | [Pizzoli2014] (2014) | Link | Monocular | Dense GPU reliant |
| RGB-D SLAM | [Endres2012] (2012) [Endres2012a] (2012) | Link | RGB-D | |
| RKSLAM | [Liu2016] (2016) | Link | Monocular, IMU | Robust to fast motion and rotation |
| ROCC | [Buczek2017] (2017) [Buczek2016] (2016) [Buczek2016a] (2016) | - | Monocular, Stereo | Decouples rotation and translation Feature outlier removal Focus on automotive |

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|------------------|---|------|---------------------|---|
| ROVIO | [Bloesch2015] (2014) | Link | Monocular, IMU | Focus on IMU integration Relative representation |
| RSLAM | [Mei2011] (2011) | - | Stereo | Relative representation No global optimization |
| ScaViSLAM | [Strasdat2011] (2011) | Link | Stereo | Scale drift aware through using Lie groups |
| SLAM++ | [Milford2012] (2012) [Salas-moreno2013] (2013) | - | RGB-D | Uses KinectFusion Real-time object recognition |
| SlamDunk | [Fioraio2015] (2015) | Link | RGB-D | Runs on CPU |
| SOFT | [Cvisic2015] (2015) | - | Stereo, IMU | Odometry based on feature selection Separates rotation and translation |
| S-PTAM | [Pire2017] (2017) [Pire2015] (2015) | Link | Stereo | Robust to lighting changes feature-based, BRISK descriptor |
| SVO | [Forster2017] (2017) [Forster2014a] (2014) | Link | Monocular | Focus on runtime (embedded devices) Needs a high framerate |
| V-LOAM | [Zhang2015] (2015) | - | Monocular, LIDAR | Combination of camera and LIDAR |