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In [15], Montemerlo et al. proposed an algorithm called FastSLAM as an efficient and robust solution to the simultaneous localization and mapping problem. This paper describes a modified version of FastSLAM which overcomes important ...

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Page 1. Thin Junction Tree Filters for Simultaneous Localization and Mapping

(Revised May 14, 2003) Mark A. Paskin Report No. UCB/CSD-02-1198 September

2002 Computer Science Division (EECS) University ...

Cited by 93 - [Related Articles](#) - [View as HTML](#) - [Web Search](#) - [BL Direct](#)[Towards a general theory of topological maps](#) - all 9 versions »E Remolina, B Kuipers - [Artificial Intelligence](#), 2004 - [Elsevier](#)

Abstract We present a general theory of topological maps whereby sensory input, topological and local metrical information are combined to define the topological maps explaining such information. Topological maps correspond ...

Cited by 67 - [Related Articles](#) - [Web Search](#)[Simultaneous Mapping and Localization With Sparse Extended Information Filters: Theory and Initial ...](#) - all 17 versions »S Thrun, D Koller, Z Ghahramani, H Durrant-Whyte, ... - [Algorithmic Foundations of Robotics V](#), 2003 - [books.google.com](#)

Simultaneous Mapping and Localization with Sparse Extended Information Filters:

Theory and Initial Results Sebastian Thrun, Daphne Koller 2, Zoubin Ghahramani

3, Hugh Durrant-Whyte 4, and Andrew Y. Ng 1 Carnegie Mellon University, ...

Cited by 64 - [Related Articles](#) - [Web Search](#)[Hierarchical SLAM: Real-Time Accurate Mapping of Large Environments](#) - all 6 versions »C Estrada, J Neira, JD Tardos - [Robotics](#), [IEEE Transactions on](#) [see also [Robotics and ...](#)], 2005 - [ieeexplore.ieee.org](#)

Abstract—In this paper, we present a hierarchical mapping method that allows us to obtain accurate metric maps of large environments in real time. The lower (or local) map level is composed of a set of local maps that are ...

Cited by 54 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)[Vision-based global localization and mapping for mobile robots](#) - all 5 versions »S Se, DG Lowe, JJ Little - [Robotics](#), [IEEE Transactions on](#) [see also [Robotics and ...](#)], 2005 - [ieeexplore.ieee.org](#)

Abstract—We have previously developed a mobile robot system which uses scale-invariant visual landmarks to localize and simultaneously build three-dimensional (3-D) maps of unmodified environments. In this paper, ...

Cited by 54 - [Related Articles](#) - [Web Search](#)[Towards lazy data association in SLAM](#) - all 2 versions »D Hahnel, W Burgard, B Wegbreit, S Thrun - [Proceedings of the 11th International Symposium of Robotics ...](#) - [Springer](#)

Abstract. We present a lazy data association algorithm for the simultaneous localization and mapping (SLAM) problem. Our approach uses a tree-structured Bayesian representation of map posteriors that makes it possible to revise ...

Cited by 47 - [Related Articles](#) - [Web Search](#)[\[PDF\] FastSLAM: A Factored Solution to the Simultaneous Localization and Mapping Problem With Unknown Data ...](#) - all 10 versions »M Montemerlo - 2003 - [cs.cmu.edu](#)

Page 1. FastSLAM: A Factored Solution to the Simultaneous Localization and Mapping

Problem With Unknown Data Association Michael Montemerlo 11th July 2003

CMU-RI-TR-03-28 The Robotics Institute Carnegie Mellon University ...

Cited by 49 - [Related Articles](#) - [View as HTML](#) - [Web Search](#)[\[PDF\] Mapping partially observable features from multiple uncertain vantage points.](#) - all 12 versions »JJ Leonard, RJ Rikoski, PM Newman, M Bosse - [International Journal of Robotics Research](#), 2002 - [robots.ox.ac.uk](#)

This paper presents a technique for mapping partially observable features from multiple uncertain vantage points. The problem of concurrent mapping and localization (CML) is stated as follows: starting from an initial known ...

Cited by 40 - [Related Articles](#) - [View as HTML](#) - [Web Search](#) - [BL Direct](#)[Square Root SAM: Simultaneous Localization and Mapping via Square Root Information Smoothing](#) - all 15 versions »F Dellaert, M Kaess - [The International Journal of Robotics Research](#), 2006 - [ijr.sagepub.com](#)

Solving the SLAM (simultaneous localization and mapping) problem is one way to enable a robot to explore, map, and navigate in a previously unknown environment. Smoothing approaches have been investigated as a viable ...

Cited by 36 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)[\[PDF\] Consistent, convergent, and constant-time SLAM](#) - all 7 versions »JJ Leonard, P Newman - [International Joint Conference on Artificial Intelligence](#), 2003 - [cml.mit.edu](#)

This paper presents a new efficient algorithm for simultaneous localization and mapping (SLAM), using multiple overlapping submaps, each built with respect to a local frame of reference defined by one of the features in the ...

Cited by 37 - [Related Articles](#) - [View as HTML](#) - [Web Search](#) - [BL Direct](#)[Multi-Robot SLAM With Sparse Extended Information Filters](#) - all 4 versions »S Thrun, Y Liu - [Robotics Research: The Eleventh International Symposium](#), 2005 - [books.google.com](#)

Multi-robot SLAM with Sparse Extended Information Filters Sebastian Thrun 1 and

Yufeng Liu 1 Department of Computer Science, Stanford University, Stanford, CA 2

Department of Physics, Carnegie Mellon University University, Pittsburgh, ...  
[Cited by 34](#) - [Related Articles](#) - [Web Search](#)

[Linear time vehicle relocation in SLAM](#) - all 7 versions »

J Neira, JD Tardos, JA Castellanos - *Robotics and Automation*, 2003. *Proceedings. ICRA'03. IEEE ...*, 2003 - [ieeexplore.ieee.org](#)

I. INTRODUCTION The objective of simultaneous localization and mapping (SLAM) is to use the information obtained by sensors mounted on a vehicle to build and update a map of the environment and compute the vehicle location in that ...

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[Towards robust data association and feature modeling for concurrent mapping and localization](#) - all 10 versions »

JJ Leonard, PM Newman, RJ Rikoski, J Neira, JD ... - *Proceedings of the Tenth International Symposium on Robotics ...*, 2001 - Springer

Abstract. One of the most challenging aspects of concurrent mapping and localization (CML) is the problem of data association. Because of uncertainty in the origins of sensor measurements, it is difficult to determine the ...

[Cited by 27](#) - [Related Articles](#) - [Web Search](#)

[Mobile Robot Simultaneous Localization and Mapping in Dynamic Environments](#) - all 7 versions »

DF Wolf, GS Sukhatme - *Autonomous Robots*, 2005 - Springer

Abstract. We propose an on-line algorithm for simultaneous localization and mapping of dynamic environments. Our algorithm is capable of differentiating static and dynamic parts of the environment and representing them ...

[Cited by 22](#) - [Related Articles](#) - [Web Search](#)

[Autonomous exploration and mapping of abandoned mines](#) - all 9 versions »

S Thrun, S Thayer, W Whittaker, C Baker, W Burgard ... - *Robotics & Automation Magazine, IEEE*, 2004 - [ieeexplore.ieee.org](#)

Pittsburgh, had been abandoned and flooded for many decades. Before the robot's entry, the mine was mostly drained, leaving behind acidic mud that miners refer to as "yellow boy." Figure 2 depicts the vehicle after ...

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[Robust range-only beacon localization](#) - all 25 versions »

E Olson, J Leonard, S Teller - *Autonomous Underwater Vehicles*, 2004 *IEEE/OES*, 2004 - [ieeexplore.ieee.org](#)

I. INTRODUCTION Stationary acoustic transponder beacons (also known as Long Baseline, or LBL, beacons) are commonly used as navigational aids in AUV systems. AUVs can estimate the range to a beacon by sending a ping and ...

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[Visually augmented navigation in an unstructured environment using a delayed state history](#) - all 3 versions »

R Eustice, O Pizarro, H Singh - *Robotics and Automation*, 2004. *Proceedings. ICRA'04. 2004 ...* - [ieeexplore.ieee.org](#)

Page 1 0-7803-8232-3/041\$17.00 t2004 IEEE 25 Proceedings of the 2004 IEEE International Conference on Robotics & Automation New Orleans, LA • April 2004 Visually Augmented Navigation in an Unstructured Environment Using a ...

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[Towards Constant-Time SLAM on an Autonomous Underwater Vehicle Using Synthetic Aperture Sonar](#) - all 6 versions »

PM Newman, JJ Leonard, RJ Rikoski - *International Symposium of Robotics Research (ISRR03)*, 2003 - Springer

Abstract. This paper applies a new constant-time, consistent and convergent Simultaneous Localization and Mapping (SLAM) algorithm to synthetic aperture sonar (SAS) data acquired by an autonomous underwater vehicle (AUV). Using ...

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[PDF\] A framework for vision based bearing only 3D SLAM](#) - all 7 versions »

P Jensfelt, D Kragic, J Folkesson, M Bjorkman - *Proceedings of the IEEE International Conference on Robotics ...* - [robocup.csu.edu.cn](#)

Abstract— This paper presents a framework for 3D vision based bearing only SLAM using a single camera, an interesting setup for many real applications due to its low cost. The focus is on the management of the features to ...

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[PDF\] SLAM using incremental probabilistic PCA and dimensionality reduction](#) - all 4 versions »

E Brunskill, N Roy - *Proc. ICRA - mapleleaf.csail.mit.edu*

Abstract— The recent progress in robot mapping (or SLAM) algorithms has focused on estimating either point features (such as landmarks) or grid-based representations. Both of these representations generally scale with the ...

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[PDF\] Simultaneous Localisation and Mapping \(SLAM\): Part II State of the Art](#) - all 4 versions »

T Bailey, H Durrant-Whyte - *Robotics and Automation Magazine*, 2006 - [quasar.inf.elte.hu](#)

SLAM is the process by which a mobile robot can build a map of the environment and at the same time use this map to compute its location. The past decade has seen rapid and exciting progress in solving the SLAM problem together ...

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[The Graph SLAM Algorithm with Applications to Large-Scale Mapping of Urban Structures](#) - all 2 versions »

S Thrun, M Montemerlo - *International Journal of Robotics Research*, 2006 - [portal.acm.org](#)

This article presents GraphSLAM, a unifying algorithm for the offline SLAM problem. GraphSLAM is closely related to a recent sequence of research papers on applying optimization techniques to SLAM problems. It transforms the SLAM ...

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[PDF\] Simultaneous localization and mapping \(SLAM\): part II](#) - all 3 versions »

T Bailey, H Durrant-Whyte - *IEEE Robotics & Automation Magazine*, 2006 - [jasonwitt.googlepages.com](#)

Simultaneous localization and mapping (SLAM) is the process by which a mobile robot can build a map of the environment and, at the same time, use this map to compute its location. The past decade has seen rapid and exciting progress ...

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[PDF\] Unscented SLAM for Large-Scale Outdoor Environments](#) - all 5 versions »

R Martinez-Cantin, JA Castellanos - *IEEE/RSJ Int. Conf. on Intelligent Robots and Systems, 2005* - [webdiis.unizar.es](http://webdiis.unizar.es)

Abstract— This paper presents an experimentally validated alternative to the classical extended Kalman filter approach to the solution of the probabilistic state-space Simultaneous Localization and Mapping (SLAM) problem. Several ...

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[Hybrid topological/metric approach to SLAM](#) - all 3 versions »

K Kouzoubov, D Austin - *Robotics and Automation, 2004. Proceedings. ICRA'04. 2004* ... - [ieeexplore.ieee.org](http://ieeexplore.ieee.org)

Page 1. Ming softhe 2004 IEEE Intsrnational Conference on Robotic. a Automation New Mans . LA npri2w4 Hybrid TopologicaVMetric Approach to SLAM Kirill Kouzoubov Robotic Systems Lab, RSISE Australian ...

Cited by 8 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)

[Real-time appearance-based Monte Carlo localization](#)

F Linäker, M Ishikawa - *Robotics and Autonomous Systems, 2006* - Elsevier

A new technique for vision processing is presented which lets a mobile robot equipped with an omnidirectional camera perform appearance-based global localization in real time. The technique is applied directly to the ...

Cited by 7 - [Related Articles](#) - [Web Search](#)

[Towards Fully Autonomous Visual Navigation](#) - all 2 versions »

J Knight - 2002 - [robots.ox.ac.uk](http://robots.ox.ac.uk)

This thesis addresses some key issues which affect the level of autonomy inherent in visual navigation systems, with wider applicability in a range of fields. They can be divided into two areas. Firstly, automated ...

Cited by 7 - [Related Articles](#) - [View as HTML](#) - [Web Search](#)

[Orthogonal SLAM: a Step toward Lightweight Indoor Autonomous Navigation](#) - all 2 versions »

V Nguyen, A Harati, A Martinelli, R Siegwart, N ... - *Proceedings of the IEEE/RSJ Intenational Conference on ...*, 2006 - [asl.epfl.ch](http://asl.epfl.ch)

Abstract— Today, lightweight SLAM algorithms are needed in many embedded robotic systems. In this paper the Orthogonal SLAM (OrthoSLAM ) algorithm is presented and empirically validated. The algorithm has constant time ...

Cited by 7 - [Related Articles](#) - [View as HTML](#) - [Web Search](#)

[Robust scan matching localization using ultrasonic range finders](#)

A Burguera, G Oliver, JD Tardos - *Intelligent Robots and Systems, 2005.(IROS 2005). 2005 IEEE/ ...*, 2005 - [ieeexplore.ieee.org](http://ieeexplore.ieee.org)

Abstract— The work presented in this paper deals with scan matching localization using ultrasonic range sensors. Our contribution resides in the extension of ICP based algorithms to be used with ultrasonic sensor data. ...

Cited by 6 - [Related Articles](#) - [Web Search](#)

[Incorporation of Feature Tracking into Simultaneous Localization and Map Building via Sonar Data](#) - all 4 versions »

YL Ip, AB Rad - *Journal of Intelligent and Robotic Systems, 2004* - Springer

(Received: 4 March 2003; in final form: 15 October 2003) Abstract. Simultaneous Localization and Map building (SLAM) is referred to as the ability of an Autonomous Mobile Robot (AMR) to incrementally extract the surrounding ...

Cited by 6 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)

[EKF SLAM updates in O \(n\) with Divide and Conquer SLAM](#) - all 2 versions »

LM Paz, P Jensfelt, JD Tardos, J Neira - 2007 IEEE International Conference on Robotics and ... , 2007 - [webdiis.unizar.es](http://webdiis.unizar.es)

Abstract— In this paper we describe Divide and Conquer SLAM (D&C SLAM), an algorithm for performing Simulta- neous Localization and Mapping using the Extended Kalman Filter. D&C SLAM overcomes the two fundamental limitations ...

Cited by 5 - [Related Articles](#) - [View as HTML](#) - [Web Search](#)

[Exploiting distinguishable image features in robotic mapping and localization](#) - all 7 versions »

P Jensfelt, J Folkesson, D Kragic, HI Christensen - 1st european robotics symposium (euros-06). Palermo, Italy, 2006 - Springer

Summary. Simultaneous localization and mapping (SLAM) is an important re- search area in robotics. Lately, systems that use a single bearing-only sensors have received significant attention and the use of visual sensors have been ...

Cited by 6 - [Related Articles](#) - [Web Search](#)

[Multi-aided Inertial Navigation for Ground Vehicles in Outdoor Uneven Environments](#) - all 2 versions »

B Liu, M Adams, J Ibanez-Guzman - *Robotics and Automation, 2005. Proceedings of the 2005 IEEE ...*, 2005 - [ieeexplore.ieee.org](http://ieeexplore.ieee.org)

Abstract— A good localization ability is essential for an autonomous vehicle to perform any functions. For ground vehicles operating in outdoor, uneven and unstructured envi- ronments, the localization task becomes much more ...

Cited by 4 - [Related Articles](#) - [Web Search](#) - [BL Direct](#)

[Robotic mapping with polygonal random fields](#) - all 2 versions »

MA Paskin, S Thrun - 21st Conf. on Uncertainty in Artificial Intelligence, 2005 - [ai.stanford.edu](http://ai.stanford.edu)

Two types of probabilistic maps are popular in the mobile robotics literature: occupancy grids and geometric maps. Occupancy grids have the advantages of simplicity and speed, but they represent only a restricted class of maps ...

Cited by 5 - [Related Articles](#) - [View as HTML](#) - [Web Search](#)

[Optimal sensor placement for agent localization](#) - all 3 versions »

DB Jourdan, N Roy - *Proceedings of the IEEE/ION Conference on Position, Location ...* - [mapleleaf.csail.mit.edu](http://mapleleaf.csail.mit.edu)

Abstract— In this paper we consider deploying a network of static sensors to help an agent navigate in an area. In particular the agent uses range measurements to the sensors to localize itself. We wish to place the ...

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[Robocentric map joining: Improving the consistency of EKF-SLAM](#) - all 5 versions »

JA Castellanos, R Martinez-Cantin, JD Tardós, J ... - *Robotics and Autonomous Systems, 2007* - Elsevier

In this paper 1 we study the Extended Kalman Filter approach to simultaneous localization and mapping (EKF-SLAM), describing its known properties and limitations, and concentrate on the filter consistency issue. We show that ...

Cited by 4 - [Related Articles](#) - [Web Search](#)

[Robust sonar feature detection for the SLAM of mobile robot](#)

J Choi, S Ahn, WK Chung - *Intelligent Robots and Systems, 2005.(IROS 2005). 2005 IEEE/ ...*, 2005 - [ieeexplore.ieee.org](#)

SLAM. This paper proposes a robust sonar feature detection algorithm. This algorithm gives feature detection methods for both point features and line features. The point feature detection method is based on the TBF [1] ...

Cited by 3 - [Related Articles](#) - [Web Search](#)

[PDF Optimal local map size for EKF-based SLAM - all 3 versions »](#)

LM Paz, J Neira - *Intelligent Robots and Systems, 2006 IEEE/RSJ International ...*, 2006 - [vv.inf.tu-dresden.de](#)

Abstract— In this paper we show how to optimize the computational cost and maximize consistency in EKF-based SLAM for large environments. We combine Local Mapping with Map Joining in a way that the total cost of computing the ...

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[PDF SLAM with sparse sensing - all 6 versions »](#)

KR Beevers, WH Huang - *IEEE Intl. Conf. on Robotics and Automation, 2006 - robocup.csu.edu.cn*

Abstract— Most work on the simultaneous localization and mapping (SLAM) problem assumes the frequent availability of dense information about the environment such as that provided by a laser rangefinder. However, for ...

Cited by 3 - [Related Articles](#) - [View as HTML](#) - [Web Search](#)

[Toward a Unified Bayesian Approach to Hybrid Metric-Topological SLAM](#)

JL Blanco, JA Fernández-Madriral, J González - *Robotics, IEEE Transactions on [see also Robotics and ...*, 2008 - [ieeexplore.ieee.org](#)

Abstract— This paper introduces a new approach to simultaneous localization and mapping (SLAM) that pursues robustness and accuracy in large-scale environments. Like most successful works on SLAM, we use Bayesian filtering ...

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[PDF Feature extraction from laser scan data based on curvature estimation for mobile robotics - all 2 versions »](#)

P Núñez, R Vázquez-Martín, JC del Toro, A Bandera ... - *Proc. IEEE Int. Conf. Robotics and Automation, 2006 - robocup.csu.edu.cn*

Abstract— This paper presents a geometrical feature detection system to use with conventional 2D laser rangefinders. This system consists of three main modules: data acquisition and pre-processing, rupture and breakpoint ...

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[Three-dimensional mapping utilizing stereovision and Bayesian inference - all 6 versions »](#)

T Kou, K Suzuki, S Hashimoto - *Proceedings of SPIE, 2004 - link.aip.org*

In this study we propose a method for creating 3D map of real world environment by using 3D occupancy grids. The map is created by characterizing each grid associated with a certain area in the real world environment by utilizing ...

Cited by 2 - [Related Articles](#) - [Web Search](#)

[Fuzzy constraint satisfaction approach for landmark recognition in mobile robotics - all 2 versions »](#)

A Otero, P Félix, C Regueiro, M Rodríguez, S Barro - *AI Communications, 2006 - IOS Press*

Abstract. This work deals with landmark recognition in mobile robotics, using a new model based on Constraint Satisfaction Problems (CSP): the Multivariable Fuzzy Temporal Profile model (MFTP). A representation supported by CSPs ...

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[PDF A New Approach for Large-Scale Localization and Mapping: Hybrid Metric-Topological SLAM - all 2 versions »](#)

JL Blanco, JA Fernandez-Madriral, J Gonzalez - *Robotics and Automation, 2007 IEEE International Conference ...*, 2007 - [isa.uma.es](#)

Abstract— Most successful works in Simultaneous Localization and Mapping (SLAM) aim to build a metric map under a probabilistic viewpoint employing Bayesian filtering techniques. This work introduces a new hybrid metric-topological ...

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[PDF A mobile robot that maps naively but plans intelligently - all 4 versions »](#)

CK Wong, WK Yeap, M Sapiyan - *Proceedings of the Artificial Intelligence and Application ...*, 2005 - [aut.ac.nz](#)

We implemented Yeap's computational theory of cognitive mapping [1], [2] on a mobile robot equipped only with sonar sensors and an odometer. As expected, the resulting maps are erroneous. We demonstrate how a network of such highly ...

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[Simultaneous Localization and Mapping - all 2 versions »](#)

S Thrun - *Robot and Cognitive Approaches to Spatial Mapping. STAR - Springer*

Summary. This article provides a comprehensive introduction into the simultaneous localization and mapping problem, better known in its abbreviated form as SLAM. SLAM addresses the problem of a robot navigating an unknown ...

Cited by 2 - [Related Articles](#) - [Web Search](#)

[PDF Lie algebraic approach for consistent pose registration for general euclidean motion - all 6 versions »](#)

MA Agrawal - *Proc. IEEE ICRA, 2005 - citeseer.comp.nus.edu.sg*

Abstract— We study the problem of registering local relative pose estimates to produce a global consistent trajectory of a moving robot. Traditionally, this problem has been studied with a flat world assumption wherein the robot ...

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[PDF Large-scale loop-closing with pictorial matching - all 2 versions »](#)

C Chen, H Wang - *Proceedings of the 2006 IEEE International Conference on ...*, 2006 - [robocup.csu.edu.cn](#)

Abstract— This paper presents a mapping method that can accurately map large environment with one single robot by visiting the environment for only once, and the resulting map can provide thorough 3D description for the environment ...

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[PDF SLAM using an Imaging Sonar for Partially Structured Underwater Environments - all 3 versions »](#)

D Ribas, P Ridao, J Neira, J Tardos - *Proc. of the IEEE International Conference on Intelligent ...*, 2006 - [vv.inf.tu-dresden.de](#)

Abstract— In this paper we describe a system for underwater navigation with AUVs in partially structured environments, such as dams, ports or marine

platforms. An imaging sonar is used to obtain information about the ...

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[PDF SLAM using Visual Scan-Matching with Distinguishable 3D Points](#) - all 2 versions »

F Bertolli, P Jensfelt, HJ Christensen - Proc. of IEEE/RSJ International Conference on Intelligent ..., 2006 - cas.kth.se

Abstract— Scan-matching based on data from a laser scanner is frequently used for mapping and localization. This paper presents a scan-matching approach based instead on visual information from a stereo system. The Scale ...

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[PDF Incremental multi-robot mapping](#) - all 2 versions »

R Lakaemper, LJ Latecki, D Wolter - Int. Conf. on Intelligent Robots and Systems (IROS), 2005 - cis.temple.edu

Abstract— The purpose of this paper is to present a technique to create a global map of robots' surroundings by converting the raw data acquired from a scanning sensor to a compact map composed of just a few generalized ...

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[Local maps fusion for real time multirobot indoor simultaneous localization and mapping](#) - all 6 versions »

D Rodriguez-Losada, F Matia, A Jimenez - Robotics and Automation, 2004. Proceedings. ICRA'04. 2004 ..., 1926 - ieeexplore.ieee.org

Page 1 Sss - S S fy Figure 1. Objects representation with error vectors \* This work is funded by Spanish Ministry of Science and Technology (UR.BANO: t)P12001 -3652C0201) and EU 5th R&D Framework Program (WebFATR: 1ST- 2000-29456) and ...

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[D-SLAM: A Decoupled Solution to Simultaneous Localization and Mapping](#) - all 2 versions »

Z Wang, S Huang, G Dissanayake - International Journal of Robotics Research, 2007 - portal.acm.org

The main contribution of this paper is the reformulation of the simultaneous localization and mapping (SLAM) problem for mobile robots such that the mapping and localization can be treated as two concurrent yet separated processes: ...

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[Summarizing Image/Surface Registration for 6DOF Robot/Camera Pose Estimation](#) - all 2 versions »

E Battle, C Matabosch, J Salvi - Third Iberian Conference on Pattern Recognition and Image ... - Springer

Abstract. In recent years, 6 Degrees Of Freedom (DOF) Pose Estimation and 3D Mapping is becoming more important not only in the robotics community for applications such as robot navigation but also in computer vision for the ...

[Cited by 1](#) - [Related Articles](#) - [Web Search](#) - [BL Direct](#)

[Local map fusion for real-time indoor simultaneous localization and mapping](#)

D Rodriguez-Losada, F Matia, A Jimenez, R Galan - Journal of Field Robotics, 2006 - doi.wiley.com

Among the solutions to the simultaneous localization and mapping SLAM problem with probabilistic techniques, the extended Kalman filter EKF is a very common approach. There are several approaches to deal with its computational ...

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R Martinez-Cantin, JA Castellanos - Robotics and Automation, 2006. ICRA 2006. Proceedings 2006 ..., 2006 - robocup.csu.edu.cn

Abstract— This paper addresses the consistency issue of the Extended Kalman Filter approach to the simultaneous localization and mapping (EKF-SLAM) problem. Linearization of the inherent nonlinearities of both the motion ...

[Cited by 1](#) - [Related Articles](#) - [View as HTML](#) - [Web Search](#)

[Building geometric feature based maps for indoor service robots](#)

D Rodriguez-Losada, F Matia, R Galan - Robotics and Autonomous Systems, 2006 - Elsevier

This paper presents an efficient geometric approach to the Simultaneous Localization and Mapping problem based on an Extended Kalman Filter. The map representation and building process is formulated, fully implemented and ...

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[PDF Toward Understanding Human Expression in Human-Robot Interaction](#) - all 8 versions »

WB Miners - 2006 - uwspace.uwaterloo.ca

Intelligent devices are quickly becoming necessities to support our activities during both work and play. We are already bound in a symbiotic relationship with these devices. An unfortunate effect of the pervasiveness of intelligent ...

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[PDF Multi-robot SLAM with Unknown Initial Correspondence: The Robot Rendezvous Case](#) - all 2 versions »

XS Zhou, SI Roumeliotis - Proceedings of IEEE International Conference on Intelligent ..., www-users.cs.umn.edu

Abstract— This paper presents a new approach to the multi-robot map-alignment problem that enables teams of robots to build joint maps without initial knowledge of their relative poses. The key contribution of this work is an ...

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