**SLAM论文阅读总结**

**重要词组：**

Simultaneous localization and mapping 实时定位与地图构建

the concurrent construction of a model of the environment(the map), and the estimation of the state of the robot moving within it

enabling large-scale real-world applications 支持大规模的实际应用

witnessing a steady transition of this technology to industry 见证了这项技术向工业级的过渡

survey the current state of SLAM and consider future directions 对现有的研究进行调查同时思考了未来的发展方向

covering a broad set of topics including 涵盖广泛的主体

other new frontiers 其他的新的前沿

the …. simultaneously serves as a position paper and tutorial to those who are users of

同时作为

looking at the published research with a critical eye 以批判的眼光看已发表的论文

deserve careful scientific investigation

delineate open challenges and new research issues

obstacles 障碍物

robot velocity,

sensor biases

calibration parameters

dead-reckoning would quickly drift over time 随时间漂移

landmarks 地标

with respect to 关于，至于

scenario 情境

observability, convergence, and consistency 可观察性，收敛性，一致性

ranging from sensor calibration to system integration 传感器校准及系统集成

a broad overview of the current state of

loop closures

state-of-the-art 最先进的

sensor fusion 传感器融合

topology 拓扑学

merits 优点

validate 证实

mechanism 机制

consistent 一致的

subtle patterns 细微图案

dense 稠密的

stereo 立体的

having a computer interpret an image at the same level as

使计算机在同一水平上对图像进行解释

elusive 难懂的

specify 指定详细说明

scattered 散射，分散

refracted 折射

rendering a still scene composed of everyday objects

渲染一个由日常物体组成的静态场景

animating extinct creatures such as 使得灭绝的生物复活

illusion 幻觉

illumination 照明

underestimate 低估

get on with 在…获得成功，与…友好相处；继续干

misperception 误解

artificial intelligence 人工智能

应用：

Optical character recognition 光学字符识别

Machine inspection

3D model building(photogrammetry)

Medical imaging 医疗影像

Automotive safety

Match move

Motion capture 动作捕捉

Surveillance 监控

Fingerprint recognition and biometrics 指纹识别与生物识别

merging computer generated imagery (CGI) with live action footage by tracking

feature points in the source video to estimate

通过追踪视频源中的特征点将计算机生成的图像与实景精通相结合，来估计。。

motivating and inspiring 激励和鼓舞人心的

constraints 约束

synthetic 合成的

light interacts with the scene and atmospheric effects

reasonably efficient in terms of run-time and space

sketch out 概略叙述

visual perception component 视觉感知组件

endow robots with intelligent behavior 赋予机器人智能行为

reasoning and planning 推理和规划

recover the three-dimensional structure of the world from images

use this as a stepping stone towards full scene understanding

one of the favored approaches being used in object recognition

feature-based stereo correspondence algorithms 基于特征的立体对应算法

intensities and shading variations 强度和阴影变化

computation 估计，计算

scale-space 尺度空间

displacing or augmenting 替换或增强

quantitative 定量的

texture 质地，纹理

edge and contour detection 边界和轮廓检测

pose 形成，主张

regularization 正则化，调整

discrete 离散

simulated annealing 模拟退火算法

seamlessly stitched into a composite mosaic 无缝缝合

In either case 不管哪种情况

the appearance of patches of pixels surrounding the point locatio

the profile of the mountains against the sky

complementary 补充的

prerequisite 先决条件

Comprehensive 广泛的

rapid succession 快速演替

converted into a more compact and stable 转化为更加简洁稳定的。。。。

特征点种类：

**specific locations in the images**

mountain peaks, building corners, doorways, or interestingly shaped patches of snow

**edges**

textureless patches are nearly impossible to localize 结构不清的很难定位

intuitions 直觉

summation 总和

variability intrinsic

perform exhaustive matching

search for characteristic feature points and then verify that these align in a geometrically plausible way