TA03

Computer Vision-Motion Control

09:00-11:00 Chair1 : Sung-Kee Park (KIST, Korea)

Room : Base 1st Floor-Otztal Chair2 :

bile robot

Chang-kyu Lee, Tae-Yong Kuc(Sungkyunkwan Univ., KOREA)

09:00 - 09:20

TA03-1

Moving object detection in image sequences from a mo-

TA03-2

A Study of Detection and Recognition of the Land Mark for Self-Localization of Autonomous Robot in the Robot Soccer Environment (ROBOSOT)

Yoon Heo, Tae Ho Choi(Kyungpook Nat'l Univ., KOREA)

1. Introduction

2. Focus of Expansion

3. Log-Polar Mapping

4. Egomotion and Optical Flow

5. Experimental Results

6. Conclusion References





Introduction

09:20 - 09:40

- ●The environment of the RoboSot
- Extracting landmarks & feature points
- Experimental results
- Conclusion



09:40 - 10:00

TA03-3

3D multiple objects recognition using a disparity image

Hongpyo Park, Seungjoon Choi, Sungjin Kim, Sangchol Won(POSTECH, KOREA)

- 1. Introduction
- 2. Stereovison Algorithm
- 3. Superquadric Models
- 4. Recovery of Superquadric Models
- 5. Conclusions

10:00 - 10:20

TA03-4

A New Flexible Camera Calibration Method using the Projection Fluctuation Ratio of Different Line Widths

Seong Ryong Mun, HongSeok Jang, Junlk Jeong, DoHwan Rho, HoSun Lee(Chonbuk Nat'l Univ., KOREA)

- 1.Introduction
- 2. Basic Camera models and geometry
- 3. Projection of line widths
- 4. Camera calibration algorithm
- 5. Experimental results
- 6. Conclusions and future work

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Find edges of horszontal and vertical lines.
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Find line equations of harizontal and vertical of image plane

Estimate lide widths in image plane
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Find facer length
Estimates a plan or organistros of realitarations features

10:20 - 10:40

TA03-5

Indoor Environment Modeling with Stereo Camera for Mobile Robot Navigation

Sung-Kee Park, Jong-Suk Choi, Munsang Kim, Chong-won Lee(KIST, KOREA)

In this paper we propose a new method for modeling indoor environment with stereo camera and suggest a localization method for mobile robot navigation on the basis of it. From the viewpoint of easiness in map building and exclusion of artificiality, the main idea of this paper is that environment is represented as global topological map and each node has omni-directional metric and color information by using stereo camera and pan/tilt mechanism. We use the depth and color information itself in image pixel as feature for environmental abstraction. In addition, we use only the depth and color information at horizontal centerline in image, where optical axis is passing. The usefulness of this m...

10:40 - 11:00

TA03-6

Obstacle Avoidance and Lane Recognition for the Directional Control of Unmanned Vehicle.

Chang Man Kim, Hee Chang Moon, Sang Gyum Kim, Jung Ha Kim(Kookmin Univ., KOREA)

- 1. Introduction
- 2. System Configuration
- 2.1 Control System
- 2.1.1 Longitudinal control
- 2.1.2 Lateral control
- 2.2 Sensor System
- 2.2.1 Photo interrupt
- 2.2.2 Ultrasonic sensor
- 2.3 Vision system
- 2.4 Communication system
- 2.4.1 Data communication
- 2.4.2 Image Communication
- 3. Test and Result
- 3.1 Vision test
- 3.2 Ultrasonic sensor test
- 4. Conculsion

Acknowledgment

References