

(3) Edge Detector

$$f_E(I, M^i) = \frac{1}{n} \sum_{i=0}^n L(Z_i) \quad (3)$$

3.

가 가 . detector

. Edge detector
Color detector
가 detector
detector

가

detector 가

$P(M^i)$

$$P(M^i) = \alpha f_E(I, M^i) + \beta f_C(I, M^i) \quad (2)$$

. I
 f_E f_C Edge detector Color detector
. α β
edge color

• **Edge Detector:** detector edge 가
. edge

Canny edge detector edge 가 . YU
가 (3) .

Edge detection

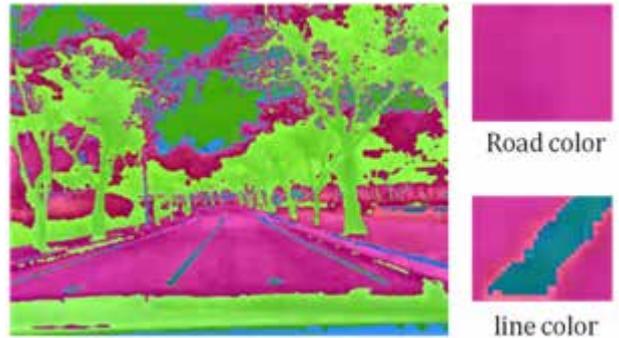
Edge Detector

(3) Z_i L
, n .

• **Color Detector:**

가 . 가
가

YUV - V (4) YU -



(4) YU

Y, U 2 가
edge 가 . YU RGB
가 .
Y, U 2 가 . 가

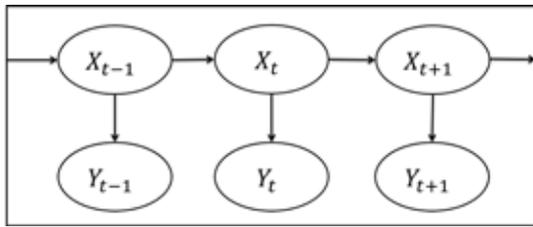
$$f_C(I, M^i) = \log_{10} \left((4|V|\pi^2)^{-\frac{1}{2}} \exp\left(-\frac{1}{2}(x - \mu)V^{-1}(x - \mu)'\right) \right) \quad (4)$$

(4) μ V 가 (Y, U) . Edge color
 Detector β log 가

4.

가

[7][8].



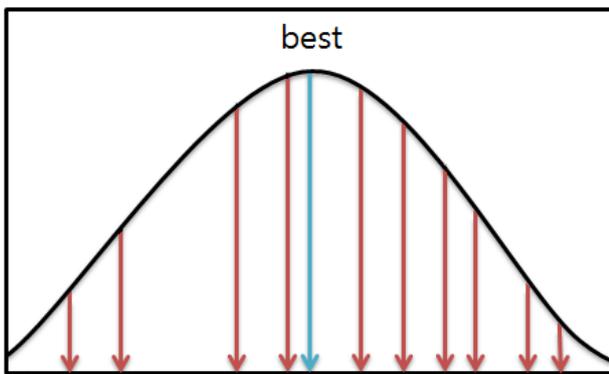
(5)

(5) X
 Y
 Y

가

가

가



(6) 가

1)

2)

3) 2)

10

가

4) 가 가 (6)
 가 가

가

가

5.

, Microsoft lifecam hd-5000

10

640x480 px

270cm

350cm

15cm

(1)

290

70

300cm



(7)

(7)

가

(7)

가

가

6.

가

가

가

URP

- [1] , , . “Morphology ROI ”, 2010 KSAE .
- [2] Burak Benligiray, Cihan Topal, Cuneyt Akinlar. “Video-based Lane Detection using a Fast Vanishing Point Estimation Method”, 2012 IEEE International Symposium on Multimedia.
- [3] , , . “ ”, 2009 (ICS) .
- [4] Kuo-Yu Chiu, Sheng-Fuu Lin. “Lane Detection using Color-Based Segmentation”. Intelligent Vehicles Symposium, 2005. IEEE.
- [5] , , . “ YCbCr ”, 2012 .
- [6] Chao Ma, Mei Xie. “A method For Lane Detection Based on Color Clustering”, 2010 Third International Conference on Knowledge Discovery and Data Mining.
- [7] Nando de Freitas. “A tutorial and exercises on particle filters for finite mixture models with an unknown number of components”
- [8] M.S. Arulampalam, S. Maskell, N. Gordon, and T.Clapp. “A tutorial on particle filters for online nonlinear/non-gaussian Bayesian tracking” . Signal Processing, IEEE Transaction on.
- [9] Stefan Vacek. “Rule-based tracking of multiple lanes using particle filters”. Multisensor Fusion and Integration for Intelligent System, 2006 IEEE International Conference on.