# Change Detection

motion Detector → دوربین مربی می‌تم

Frame 1

Frame 2

$I_1$
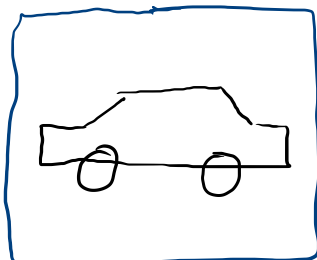
$I_2$

[ :::: ]
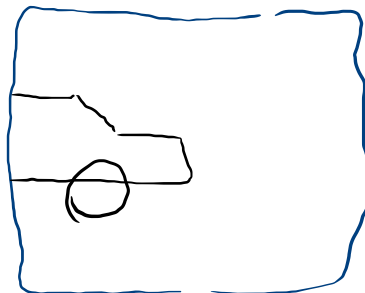
$|I_2 - I_1| \neq 0 \rightsquigarrow$ change!

Motion

Movement.

$\omega$-shadow $\rightarrow$ $|I_2 - I_1| > T$ $\rightarrow$ binary

1

0

$$F_{k+1}$$
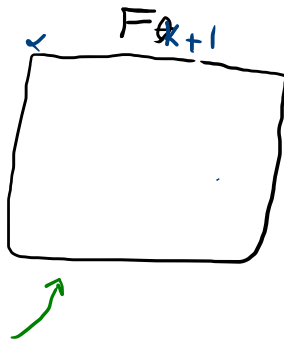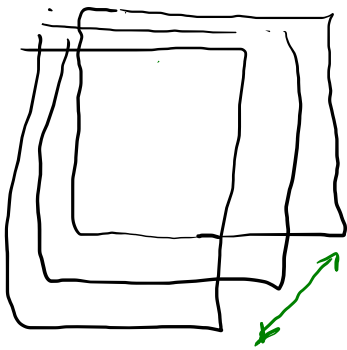
$$|I_{aver} - I_{t+1}| > T$$

$$\{j \in K$$

average $(I_1 \cdots I_k)$

$F_{\ell+1}$
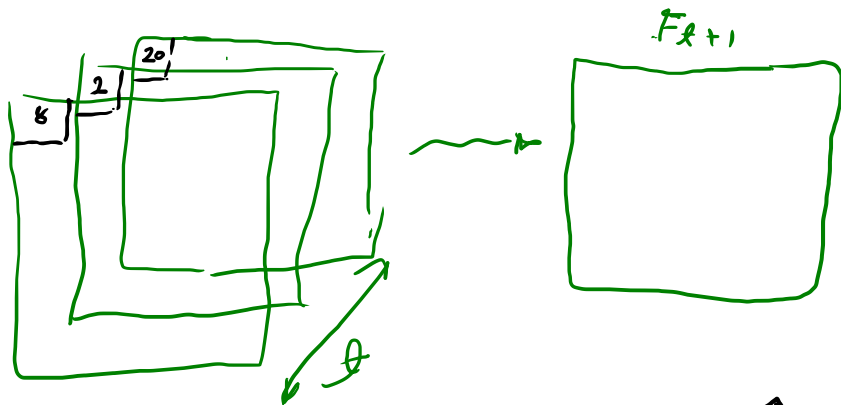
$|I_{med} - I_{\ell+1}| > T$

median $(I_1, I_2, \ldots I_\ell)$

$(8, 2, 20) \longrightarrow (2, 8, 20) \dashrightarrow$

medians

## Median

1 eres

F1

| 80 | 50 |
|----|----|
| 30 | 10 |

- - - → 

F2
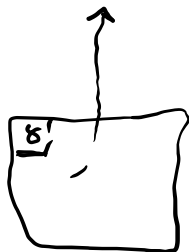
| 80 | 50 |
|----|----|
| 30 | 10 |

$$|I_2 - I_1| \left\{ \begin{bmatrix} 80 & 50 \\ 30 & 10 \end{bmatrix} - \begin{bmatrix} 80 & 50 \\ 30 & 10 \end{bmatrix} \right\} =$$

$$\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix} \longrightarrow$$



F2

| 30 | 15 |
|----|----|
| 18 | 90 |

$$\longrightarrow |I_2 - I_1| = \begin{bmatrix} |30-80| & |15-50| \\ |18-30| & |90-10| \end{bmatrix} = \begin{bmatrix} 50 & 35 \\ 12 & 80 \end{bmatrix}$$

$$|I_2 - I_1| > T \longrightarrow 30 : \begin{bmatrix} 1 & 1 \\ 0 & 1 \end{bmatrix}$$

$$T$$

live /

offline! $\longrightarrow$ video: $\longrightarrow$ splite $\longrightarrow$
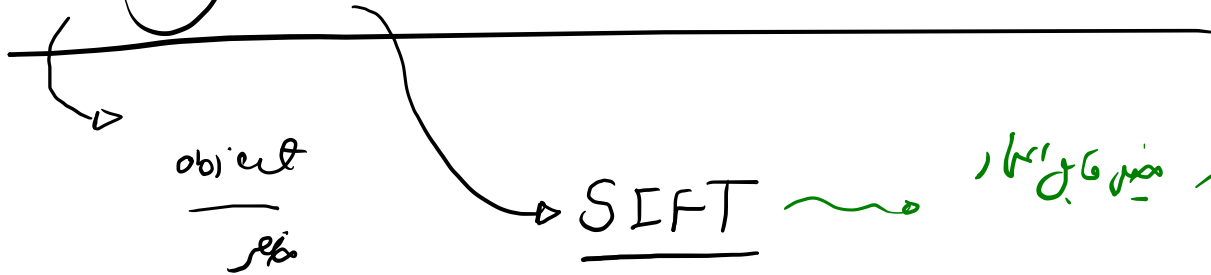
2وh
صورة $\longrightarrow$ صوت

motion $\longrightarrow$ splite

~~segmenta~~

# Objet tracking

object
قطعه

→ SIFT ~~~ تعریف ایجاد شیء ~~~ تعیین
سر
partiu
occlusioned

صفر روعاب
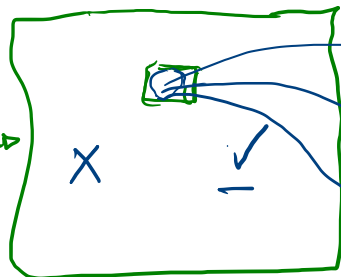
Face detection. ✓

Face recognition

✓

X        ✓
        ⎯

کازنگسٹر گروپ
نمبر فیچر

DIP → SIF
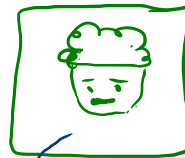
SIFT → Template
A  ,30 ✓

سیریز نمبر A

keypoint A

KP A → ✓
kp B
KP C

object tracking

Template matching.

بتن تضیف! ~ ك [green handwritten, crossed out]

~ تغ [green handwritten, crossed out]

SIFT ⤳ Featuer entracting!

$\alpha$

F1

foreground!
object

background

$\dfrac{d_o}{d_B} < ;5 \longrightarrow$ Object

Not $\longrightarrow$ background

F2

B

O