

BACKGROUND SUBTRACTION

Version 0.1
Computing
COMP120

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1 This algorithm replaces one background with another.

Algorithm 1 Background Subtraction

Require:

the height of the source image, $0 \leq h$
the width of the source image, $0 \leq w$
the source image, *image*
the original background image, *background*
the new background image, *newBackground*

```
1: procedure BACKGROUND(image, background, newBackground)
2:   for all y in h do
3:     for all x in w do
4:        $p \leftarrow \text{pixel}(\text{image}, x, y)$ 
5:        $p_b \leftarrow \text{pixel}(\text{background}, x, y)$ 
6:       if  $\text{distance}(p, p_b) < t$  then
7:          $\text{pixel}(\text{image}, x, y) \leftarrow \text{pixel}(\text{newBackground}, x, y)$ 
8:       end if
9:     end for
10:  end for
11: end procedure
```
